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ANTHROPOLOGY

IN

NORTH AMERICA

BY

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ANTHROPOLOGY IN NORTH AMERICA

PRIMITIVE AMERICAN HISTORY

By JOHN R. SWANTON and ROLAND B. DIXON

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I. — INTRODUCTION

THE history, in the strict sense of that term, of the American Indians north of Mexico is contained in writings of a conquering race and is confined entirely to the last four centuries. However, archeological investigations in classical and oriental lands have shown us that our knowledge of the history of a country does not begin with the earliest writings that have come down to us, nor yet with its most ancient inscriptions, but may be carried back far beyond them by the other relics of its culture and by studies of the living descendants of the people who possessed it. In investigating still existing peoples like the American Indians we

can appeal in the first place to their traditions which, although sometimes noncommittal and frequently misleading, gain in weight when recorded by several different persons and when taken in connection with other data. These other data consist of the information yielded by archeological and ethnological investigations, especially when they are applied to classification, whether by physical characteristics, language, or general culture. For even though we take the most extreme polygenetic position, the fact that certain tribes now separated belonged to one physical, linguistic, or cultural group indicates that there has been some kind of contact between them, and this involves true historical facts, although they are not commemorated in a single line of writing, or by a single monumental inscription.

New information regarding the tribal movements of our Indians can come from only two sources: the discovery of new manuscript sources of information or of sources published but overlooked, and information obtained by field workers directly from the Indians themselves. As the latter is partly unpublished and is at any rate given out merely as incidental to other investigations, and the former is widely scattered, we shall not attempt a historical study of the growth of our knowledge on this subject nor include a bibliography, but confine ourselves to an attempt to link together the bits of information now available into a conservative statement of the results to which our studies appear to have led.

In the absence of a satisfactory classification of native North Americans on a physical basis it will be most convenient to consider them as grouped into linguistic stocks, premising at the same time that we thereby admit the historical significance of that classification. It will, however, be difficult for us to do otherwise.

Roughly speaking, American linguistic stocks north of Mexico may be distinguished into an eastern and a western division, the former covering the eastern woodlands and most of the plains, the latter the grand plateau, the Pacific littoral, the southwestern arid region, and the plains of the extreme north, westward of Hudson bay. We will begin with the first of these, and with those stocks which occupied the southernmost part of the eastern area, of which the most important is known as Muskhogean.

II. — Indians of the Muskhogean Stock

The Muskhogean stock consists in the first place of the Muskhogeans proper and of a small branch typically represented by the Natchez. The former embraced at one time about thirty-five groups sufficiently distinct to be called tribes, but many of these were small and evidently branches of the larger groups. The tribes of real importance were the Choctaw, Chickasaw, Chakchiuma, Muskogee, Alabama, Koasati, Hitchiti, Apalachee, and Yamasi. Anciently there appears to have been another in the western part of the Muskhogean territory of which in historic times only fragments remained, known as the Napissa, Acolapissa, and Quinipissa. This tribe, the Choctaw, the Chickasaw, and the Chakchiuma spoke closely related dialects, and the traditions which have been preserved from them show that the fact was clearly recognized. The more recent legends affirm that the ancestors of at least the Chickasaw and Choctaw had emerged from the ground at the great sacred "mother hill" of Nanihwaya, in Winston county, Mississippi, between the ancient territories of these two peoples.[1] But there is an older form of the narrative according to which these tribes and their allies reached Nanihwaya from the westward and settled there only for a time before separating, the Chickasaw to the north, the Choctaw to the south. Adair, who seems to give us the very oldest form of the story, says: "The Chicasaw, Choktah and also the Chokchooma, who in process of time were forced by war to settle between the two former nations, came together from the west as one family."[2] Dr Gatschet notes several other migration legends from both Chickasaw and Choctaw, all to the same general effect.[3]

The Alabama language is very close to Choctaw, but our record of Alabama traditions is not so complete. According to Sekopechi, an old Alabama cited by Schoolcraft,[4] his people came "from the ground between the Cahawba and Alabama rivers." The late

[1] Gatschet, *Creek Mig. Leg.*, I, 106. *Miss. Hist. Soc.*, II, 229–30; IV, 269–270. Cf. Du Pratz, *Hist. de la Louisiane*, II, 216–217.

[2] Adair, *Hist. N. A. Ind.*, p. 352.

[3] *Creek Mig. Leg.*, I, 219–222. *Miss. Hist. Soc.*, II, 228–9; VIII, 521-549.

[4] *Hist. Ind. Tribes*, I, 266 sqq.

Dr Gatschet was told a somewhat similar story, only the rivers mentioned were the Alabama and the Tombigbee.[1] Those Alabama now living in Texas tell a story of having come westward across the Atlantic, but this has evidently been built up partly from what the whites have told them of their own origin, and partly from the subsequent westward emigration of the Alabama themselves. The general drift of these people in accordance with their own traditions would thus seem to have been from west to east like that of the Choctaw, and this appears to be confirmed by the encounter which De Soto had with some of them between the Chickasaw country and the Mississippi river. There is no good reason to doubt that the "Alibamo" of his chroniclers refers to the tribe we are now considering. No distinct Koasati migration legend has been preserved, but this tribe must long have been associated with the Alabama, because the languages of the two peoples are closely akin.

According to a story told Dr Gatschet by Chicote and G. W. Stidham the Hitchiti originated from a canebrake on the sea coast,[2] but those people later called Hitchiti embraced a number of tribes some of which had actually come into the Creek country from the shores of the Gulf of Mexico. Other Hitchiti claimed that their ancestors had fallen from the sky.[3] From an old doctor belonging to these people, however, the writer obtained an origin legend almost parallel with that of the Creeks, relating how they had come from a country far in the west and had followed the sun until they came out upon the ocean. As this old man also claimed to be descended from Yamasi Indians the story possibly embodies a Yamasi legend rather than that of the Hitchiti proper. From other southeastern Muskhogeans, such as the Apalachee, no legend dealing with tribal movements has been preserved, but we know that the languages of most of them belonged to the same group as Hitchiti and that they were more closely connected with Choctaw than with Muskogee.

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[1] MS., Bur. Amer. Ethnol.

[2] *Creek Mig. Leg.*, I, p. 78.

[3] Ibid., p. 77.

Of the migration legends of the Muskogee, or Creeks proper, several versions have been preserved. The longest and best known is that told to Governor Oglethorpe in 1735 by Tchikilli, "head chief of the Upper and Lower Creeks."[1] Another well known version was collected by United States Indian agent Benjamin Hawkins,[2] and a third, with modifications and exaggerations, by a French adventurer, Milfort.[3] But there are several notices besides to much the same effect, and one of the authors of this paper has collected four or five narratives. The origin myth of the Tukaba'tci Creeks differs, however, in bringing that tribe from the north.[4]

A few words may now be added regarding the Natchez group of Muskhogeans. This consisted, so far as we now know, of three tribes, the Natchez, Taensa, and Avoyel. Pénicaut is authority for the statement that the last of these had come from the Natchez, and he is probably correct;[5] that the Taensa and Natchez had not been separated long is attested by close resemblances in language and institutions. While we have no migration legend from the Taensa, two have been preserved from the more important Natchez tribe. One, the somewhat pretentious narrative of Du Pratz, brings them from the southwest,[6] while the shorter account, obtained by the missionary de la Vente, assigns to them a northwestern origin.[7] These at least suffice to show that the Natchez had notions regarding the quarter from which they had come similar to those of the Muskhogean tribes already enumerated.

It is easy to lay too much weight on the importance of oral traditions, which, although not absolutely false, may have originated in movements much less important than those which they profess to relate, or may have been true only of a limited number of people such as a ruling class. Nevertheless there is every reason to believe that they do indicate an actual drift of population which

[1] Gatschet, *Creek Mig. Leg.*, I, pp. 237–251.
[2] *Ga. Hist. Soc. Coll.*, III, 81–83.
[3] *Mémoire*, pp. 229–265.
[4] Tuggle coll., Bur. Amer. Ethnol.
[5] Margry, *Découvertes*, V, 497.
[6] Du Pratz, *Hist. de la Louisiane*, III, 62–70.
[7] *Compte-Rendu Cong. Internat. des Amér.*, 15th sess., I, 37.

has a historical value. Roughly speaking, the history of the Muskhogean stock appears to have been something like this: At least a part of the population now represented by the speakers of the languages of this group moved into the Gulf region from the northwest, being already or soon coming to be divided into a northern and a southern group, the former represented by the true Muskogee, the latter typically by the Choctaw. Later the Muskogee moved southeast and came in contact with the eastern tribes of the southern group with some of whom an alliance was formed, and the resulting confederacy finally destroyed most of those tribes—such as the Yamasi and Apalachee—which did not unite with it. The Chickasaw were a northern branch of the Choctaw but more closely associated with the Creek confederacy with which they might in time have become united. The Natchez group was evidently modified by very intimate contact and probably mixture with non-Muskhogean tribes. While their position would indicate that they represented the last wave of immigration there are reasons for believing that they had been among the first, a branch which settled to one side while the other tribes moved on eastward.

III.—Other Southeastern Indians

No tradition has been preserved regarding the origin of the Timucua, Calos, Tequesta, and Ais Indians of Florida, and we have no clue to their past history other than a distant resemblance between Timucua, the only language that has been preserved to us, and the Muskhogean dialects. A patient study of this language and comparison with those spoken north of it and in the West Indies would probably yield rich returns.

Upon Grand lake, in southern Louisiana, and a network of bayous connecting this body of water, the Mississippi, and the Gulf of Mexico, was the little Chitimachan stock consisting historically of only one tribe. Anciently they and the Natchez were on terms of closest intimacy, and for that reason Du Pratz supposed that their languages were the same. But, while there are some words common to the two, a superficial comparison fails to show any more intimate relationship, though it is quite possible that a

closer connection may be revealed by future studies. According to the only Chitimacha origin myth which has been preserved, this tribe reached the country about Grand lake from Natchez, the story being thus the direct antithesis of the Natchez legend given us by Du Pratz.[1]

Still farther west, from Vermilion bayou to Galveston bay and a little beyond, were a number of small bands of Indians generally known to the Choctaw as Atakapa ("man eaters") and now classified as the Atakapan stock. Their origin myth states that they came out of the sea but that later there was a flood which destroyed all mankind except a few persons who lived upon a high ridge,—"that of San Antonio, if we may judge," adds our informant.[2] The Opelousa and Akokisa seem to have been eastern and western branches respectively of this stock, but we know little more about them than the names. The Chitimacha and Atakapa languages present many features in common, and some of these are shared by the languages of the Muskhogean group. Taken in connection with their several migration legends a suggestion is contained here which may yield interesting results to future investigation.

Along the lower course of Yazoo river and scattered some distance both to the north and south of it, as well as westward beyond the Mississippi, was another small stock, the Tunican, consisting in historic times of probably four or five tribes, the language of only one of which has been preserved. While this language contains features suggestive of Muskhogean, Chitimachan, and Atakapan, there are striking differences. No migration legend applying to prehistoric times has been preserved, but since the "Tunica old fields" were in northwestern Mississippi at a considerable distance from historic Tunica seats, we may infer that they had moved from that place to the Yazoo at an earlier period. This inference is strengthened by Tonti's statement that "the Yazou are masters of the soil,"[3] as if their neighbors the Tunica, Korea, etc., had come in from elsewhere. The Tiou, a tribe probably belonging to this

[1] *Bull. 43, B. A. E.*, p. 356.
[2] Ibid., p. 363.
[3] French, *Hist. Coll. La.*, 82–83, 1846.

stock but incorporated with the Natchez, had been driven south by the Chickasaw.[1] A northern origin for many of these people is thus indicated. It is probable that they played an important part in the history of the lower Mississippi valley before the coming of the whites.[2]

The Uchean stock consisted of a large body of Indians on Savannah river and a smaller band on the middle course of the Tennessee. No migration legend has been recorded from them, yet there is some ground for thinking that they had moved into this country from a more northerly habitat in the latter part of the sixteenth century or the early part of the seventeenth. At any rate De Soto, Pardo, and other Spanish explorers between 1539 and 1567 mention no tribe that can be identified with them, while the English colonists of South Carolina in 1670 speak of them at once as a very powerful people.[3]

IV. — Indians of the Siouan Stock

When first encountered by Europeans the great Siouan linguistic family occupied two large and two small areas. Of the former one lay along the eastern skirts of the Appalachian mountains, between them and the tidewater region of the Atlantic coast, from about the great falls of the Potomac to Santee river, South Carolina. The second covered a vast extent of country westward of the Mississippi, extending southward to the mouth of Arkansas river and northward nearly to the Saskatchewan. Northwest it reached the Rocky mountains. The Winnebago about Green bay, Wisconsin, were cut off from the main body of western Siouans only in late times. The two detached bodies were both in what is now the state of Mississippi, one, consisting of the Biloxi, on the lower course of Pascagoula river, the other of the Ofo Indians on the lower Yazoo. No migration legends have been preserved from these last, and beyond two slight clues we have only the language upon which to build a theory of origin. One of these clues is the appearance on the De Cresnay map of 1733 of a place called "Bilouchy," on

[1] Du Pratz, *Hist. de la Louisiane*, II, p. 223.

[2] *Bull. 43, B. A. E.*, pp. 306–336.

[3] Handbook of Am. Indians, *Bull. 30, B. A. E.*, article Westo.

Alabama river near what is now known as Yellow Bluff, Wilcox county, Alabama.[1] Either the Biloxi once had a camp at this place or the tribe as a whole had occupied it in the course of its migrations. If this latter hypothesis is correct it would point to a northeastern origin for them. The other hint is furnished us in a legend reproduced by Schoolcraft purporting to recount the past history of the Catawba, the most prominent of the Siouan tribes of the east. The gist of this story is that the Catawba formerly lived in Canada and were driven thence by the French and the Mohawk. They then settled in the valley of the Ohio where they divided into two sections, part moving into the piedmont region of northern South Carolina while part went away with the Chickasaw and the Choctaw.[2] The former home in Canada and the part played by the French as well as the late date assigned to such important movements, the middle of the seventeenth century, are features that must be rejected; but careful examination leads to the belief that they have been attached to a real native tradition. The substance of this tradition probably was that the Catawba had once lived farther toward the north or northwest where they had been so harrassed by Iroquoian or other peoples that they were impelled to move on southward, and that a part of them had separated and had gone to live near the western Muskhogean tribes. It is not a little curious, to say the least, that we now know of one Siouan tribe, the Ofo, which did live near the Chickasaw, and another, the Biloxi, which lived near the Choctaw, and also that the languages of the two resemble rather the dialects of the eastern Siouan group than those of the much nearer western Siouans. It should be noted, however, that this resemblance is rather with the Tutelo and their neighbors than with the Catawba.

A northwestern origin, not alone for the Catawba but for the remaining eastern Siouans as well, is confirmed from two other sources. In his *History of Carolina*[3] Lawson says, speaking of the Siouan tribes between Charleston and the Tuscarora country,

[1] Hamilton, *Colonial Mobile*, ed. 1910, map, p. 196.

[2] Schoolcraft, *Hist. Ind. Tribes*, III, pp. 293–296.

[3] Page 279.

"When you ask them whence their forefathers came, that first inhabited the country, they will point to the westward, and say, where the sun sleeps our forefathers came thence." And it is certainly the eastern Siouan people specifically to whom Lederer refers when he says that the native inhabitants of western Virginia and Carolina affirmed that they came from the northwest "about four hundred years ago" and settled in their later country in obedience to an oracle.[1] This tale agrees in a rather remarkable way with the migration legends of the Muskhogean tribes. All three of these notices tell substantially the same story, since the Ohio valley, which was roughly north from the Catawba, was west or northwest of some of the other eastern Siouans. It is worth noting that the Catawba are represented as having been preceded by the Cherokee.

Turning to the western divisions of Siouan tribes we find nearly all migration legends pointing in a precisely contrary direction. In this great group are contained several well marked subdivisions, one of which includes the Winnebago, Iowa, Oto, and Missouri, a second the Mandan, a third the Hidatsa and Crow, a fourth the Dakota and Assiniboin, and a fifth the Omaha, Ponka, Kansa, Osage, and Quapaw. Each of these is associated by language and by claims of a common origin.

The traditions we have regarding the group first mentioned are in substantial agreement. Perhaps the most complete is that given by Maximilian, obtained originally by Major Bean, an Indian agent, from an old Oto chief. According to this, "before the arrival of the whites a large band of Indians, the Hotonga ('fish-eaters'), who inhabited the lakes, migrated to the southwest in pursuit of buffalo. At Green Bay, Wis., they divided, the part called by the whites Winnebago remaining, while the rest continued the journey until they reached the Mississippi at the mouth of Iowa river, where they encamped on the sand beach and again divided, one band, the Iowa, concluding to remain there, and the rest continuing their travels reached the Missouri at the mouth of Grand river. These gave themselves the name of Neutache ('those

[1] Lederer, *Discoveries*, p. 3.

that arrive at the mouth'), but were called Missouri by the whites. The two chiefs, on account of the seduction of the daughter of one by the son of the other, quarreled and separated one from the other. The division led by the father of the seducer became known as Waghtochtatta, or Oto, and moved farther up the Missouri."[1] The main features of this legend are reproduced in the Iowa origin myth given in Schoolcraft,[2] but it is peculiar in bringing the Winnebago to Green bay from some northeastern region, and this is the only migration feature in the tradition which may fairly be doubted. There are reasons, traditional and archeological, for believing that the Winnebago had been in Wisconsin for a very long period in pre-columbian times.

The early history of the Mandan Indians has been obscured by wild speculations based on a real or supposed lightness of complexion on their part and an attempt to identify them with the descendants of hypothetical Welsh colonists under Prince Madoc. In pursuance of that pleasing but absurd theory Catlin traces them back down the Mississippi river, and up the Ohio, until he lands them in what is now the state of Ohio, which they are supposed to have reached via the Ohio and Mississippi rivers.[3] Like others since his time he was misled, not unnaturally, by the traditions of the people themselves which refer their origin to an underground village farther east near the shores of a big water. Nowadays they appear to identify this water with the ocean, and even Maximilian says, "They affirm that they descended originally from the more eastern nations, near the sea coast."[4] But, as we have seen, the eastern Siouans do not represent themselves as having started upon the coast but inland, and it is more likely that the big water of the Mandan was one of the great lakes. At any rate, if Maximilian can be relied upon, Mandan tradition indicated the mouth of White Earth river as the point where they first reached the Missouri,[5] and from which they moved successively to the Moreau,

[1] *Travels in the Interior of N. America*, Appendix No. 1.

[2] Schoolcraft, *Hist. Ind. Tribes*, III, pp. 256–261.

[3] *N. Am. Indians*, II, pp. 259–261.

[4] Maximilian, *Travels in the Interior of N. Am.*, p. 335.

[5] Ibid., p. 366.

Heart, and Knife rivers, and finally to Fort Berthold where the remnant is now living. The mouth of White Earth river is almost due west from the Winnebago country, and this fact, taken in connection with the "big water" and a supposed linguistic relationship to Winnebago, has led some to believe that the origins of the two peoples were bound up together. Final judgment must be suspended until a more careful study of their language has been made.

The traditions of the Hidatsa also point to a lake, and this has been identified by some with Devil's lake, N. Dak. According to the story they migrated southwest from this place until they came to the Missouri which they reached at the mouth of Heart river where the Mandan were then living.[1] From that time on their history and that of the Mandan runs on together. A closely related tribe were the Amahami which were finally incorporated with them and had probably shared their fortunes for a long time previously. Some time after the Hidatsa reached the Missouri part of the tribe separated and moved out upon the plains about the upper Missouri where they afterward came to be known as Crows.[2]

When first known to Europeans the home of the Dakota seems to have been in central Minnesota, extending from Mille Lacs and the neighboring parts of the Mississippi down as far as the mouth of the Minnesota. Westward they probably did not reach much if any beyond the present boundaries of Minnesota state. After the Chippewa obtained guns, if not before, they began pressing upon the Dakota bands, drove them from Mille Lacs, and pushed them continually westward. Partly for this reason and partly perhaps owing to the attraction offered by the herds of bison, the western bands crossed the Missouri and in time occupied all of what is now South Dakota along with much of North Dakota as well. The Assiniboin are a northern branch of the Dakota and differ little from them in speech. Tradition affirms that they separated from that part of the Dakota known as Yanktonai,[3] and this appears to be confirmed to some extent by linguistic evidence. If not originally

[1] Matthews, *Ethnol. and Philol. of the Hidatsa Indians*, p. 36 et seq.

[2] Ibid.

[3] *15th Ann. Rep. B. A. E.*, p. 222.

caused this division was at least stimulated by the English trading posts on Hudson bay from which the Cree Indians were enabled to obtain firearms to the disadvantage of their southern neighbors. By withdrawing from the other Dakota and allying themselves with the Cree the Assiniboin were enabled to share some of the advantages of this trade. Tradition does not take us much back of the region indicated. Riggs states that some of the Dakota could trace their history as far back as the Lake of the Woods,[1] and from this fact and the general tradition of a northeastern origin it has been assumed by some that they originally resided northward of Lake Superior. It is also said that Chippewa tradition makes their first meeting place with this tribe at Sault Ste Marie, but, even if this were so, it would not prove that the Dakota ever lived north of the lakes.

A rough summary of the traditional origin of the Omaha, Ponka, Kansa, Osage, and Quapaw is to the effect that these tribes came westward to the mouth of the Ohio river as one people, that the Quapaw separated at that point, going down the Mississippi, and that the rest moved up the Missouri, resolving themselves gradually into the Osage, Kansa, Omaha, and Ponka in about this order.[2] No doubt this is to some extent an *ex post facto* explanation, but all of these tribes do actually constitute one linguistic group, and there is reason to believe that they at one time occupied a conterminous area farther east. That the Quapaw moved down the Mississippi much as indicated is shown by other evidence. Thus the Jesuit missionary Gravier says that the Ohio was called "the river of the Akansea [Quapaw], because the Akansea formerly dwelt on it."[3] Another missionary notes that his party passed a small stream falling into the Mississippi somewhat lower down upon which this tribe had formerly dwelt. In his *Journal Historique de l'Établissement des Français à La Louisiane* La Harpe says that "the nation Alkansa is so named because it is sprung from the Canzés established on the Missouri,"[4] and in the report of his

[1] Handbook Am. Indians, art. Dakota, p. 39.

[2] *3d Ann. Rep. B. A. E.*, pp. 211–212.

[3] Shea, *Early Voyages up and down the Miss.*, p. 120.

[4] Page 317.

Arkansas river expedition reproduced in Margry he repeats the same statement, adding that they had since adopted the name "Ougapa" [Quapaw], and that linguistically they were connected with the Osage.[1]

The several Siouan groups suggest in their situations a broken semicircle and it is therefore not surprising to find that their traditions point to a central region within this. The region thus indicated would seem to be that included in Illinois, Indiana, southern Wisconsin, and perhaps western Kentucky. We can determine it only in general outline and perhaps it included still more territory.

V. — Indians of the Iroquoian Stock

The Iroquoian tribes when first discovered formed three principal divisions, all in the eastern parts of the present United States and in the provinces of Ontario and Quebec. In the valley of the St Lawrence and about Lake Simcoe southeast of Georgian bay were four allied peoples later classed as Hurons. In western New York, along the north shore of Lake Erie, and in portions of Michigan and Ohio were the Neutral nation, or rather confederacy; east of Lake Huron and south of Georgian bay were the Tionontati or Tobacco nation; south of Lake Erie the Erie confederacy; in central New York the great confederacy of the Iroquois or "Five Nations" (Seneca, Cayuga, Oneida, Onondaga, and Mohawk); and southward of them the Conestoga, Susquehanna, and probably several other tribes extending down Susquehanna river to its mouth. The second group was located in eastern Virginia and North Carolina, and embraced the Nottoway of Nottoway river, Virginia; the Meherrin on Meherrin river; the Tuscarora, probably a confederacy of three tribes, on the Roanoke, Neuse, Taw, and Pamlico rivers; and probably the Coree or Coranine about Cape Lookout.[2] The third group consisted of the one great tribe known as Cherokee centering in the southern Appalachians and occupying portions of the present states of Virginia, North and South Carolina, Tennessee, and perhaps Kentucky, in later times northern Georgia and northern Alabama also.

[1] Margry, *Découvertes*, VI, p. 365.

[2] See Lawson, op. cit., p. 280.

It is a striking fact that, in contrast with both the Muskhogean and Siouan peoples, the migration legends which have been preserved from the Indians of this stock are meager and unsatisfactory. According to colonial documents the Meherrin were a band of refugee Conestoga which fled south after the destruction of that tribe by the Iroquois about 1675,[1] but one form of their name occurs in the census of Virginia Indians taken in 1669.[2] Thus it is evident either that some Conestoga had replaced an Algonquian tribe of similar designation or else that the tribe antedated the destruction of the Conestoga and the reputed influx of population at that time. Possibly, as Mooney suggests, an original small Iroquoian tribe was practically submerged by later immigrations of Conestoga. At all events the whole question of origin is left in uncertainty. When the first northward migration of Tuscarora took place after their defeat by the English in 1711–12 and the Five Nations were preparing to adopt them, several Iroquois chiefs are quoted as having said that the Tuscarora had gone from them long before and were now returned.[3] Still we do not know whether there was a definite tradition that the Tuscarora had gone south from the place then occupied by the Iroquois, whether there was a general tradition of a common origin, the place of separation not being specified, or whether a common origin was merely inferred from similarity in language. So far as this evidence goes, however, it indicates a northern origin for the southeastern Iroquoian group.

Still less substantial evidence is to be had regarding the movements of the tribes of the northeastern group. We hear of an attack on the Erie by some western enemy in consequence of which they were forced farther east, displacing some tribes of western New York; but this may have been a local and temporary affair. Colden, Cusick, Morgan, and some other writers assert that the traditional home of the Iroquoians was north of St Lawrence river. There is reason to believe, however, that the tales on which they base this opinion have been colored by more recent move-

[1] *Bull. 22, B. A. E.*, pp. 7–8.

[2] Neill, *Virginia Carolorum*, 326, 1886.

[3] *Handbook of Am. Indians*, art. Tuscarora.

ments such as the expulsion of the Iroquoians of Hochelaga and Stadacona from the lower St Lawrence, the movement of the Tionontati and part of the Hurons south of Lake Erie after they had been broken up by the Iroquois, and the later movement of many Iroquoian tribes toward the southwest. Boyle shows the uncertain foundation on which this theory rests and cites evidences from Iroquois and other myths pointing in a diametrically opposite direction,[1] and most students of the Iroquois agree with him in his conclusions. The culture and social organization both point to a southern rather than a northern origin, and this is confirmed to some extent by archeological evidence and suggested in the morphological resemblance noted by Professor Boas between the Iroquois and Pawnee languages. It is also confirmed to some extent by the *Walam Olum* which represents the Iroquois and Delawares as having come east at the same time. In fact the sharp contrast in many particulars between these people and their Algonquian neighbors rather marks the northern Iroquoians as a wedge of southern tribes shoved northward at no very remote date.

If the Talligewi and Alligewi of Delaware tradition are the Cherokee as Mooney contends, this fact seems to indicate an earlier occupancy of the upper Ohio valley by that tribe. Hewitt, however, is of the opinion that the people referred to under those names were a part of the Miami. Be this as it may, Haywood is authority for the statement that the Cherokee formerly had a long migration legend bringing them from the upper part of Ohio river.[2] Dr Cyrus Thomas has brought together considerable archeological and other evidence which he believes to point in the same direction, and the gradual pressure of the tribe into Creek territory may also be cited. All things considered we may say that a more northerly habitat for the Cherokee in prehistoric times appears to be indicated.[3]

VI. — Indians of the Algonquian Stock

The Algonquian, with one possible exception, was territorially the most widely extended of all North American stocks. All but three of

[1] Ann. Arch. Rep. for 1905, App. to *Rep. of the Minister of Education*, Ontario, pp. 146–156.

[2] Thomas, *The Cherokee in Pre-Columbian Times*, p. 7.

[3] Ibid.

its dialects were comparatively near together, the exceptions being all in the far west—the Blackfoot of Montana, Alberta, and western Saskatchewan and Assiniboia, and the Cheyenne and Arapaho of our own great plains, the last the most divergent of all. The main group of dialects is further divided into those of the Cree, Chippewa, and Massachuset types. To the Chippewa group belong the Chippewa, Ottawa, Potawatomi, Illinois, and Miami; to the Massachuset type belong the Indians of Rhode Island, eastern Massachusetts, and a few others. The remainder are all of the Cree type. When first encountered by Europeans the Indians of this major group were almost cut in two by the Iroquoians, leaving one set of tribes along the Atlantic coast from the mouth of the St Lawrence to Pamlico sound, and a northern and western group occupying much of eastern Canada above the Iroquoians and some of our present middle western states. We have few migration legends from the Atlantic coast tribes outside of the Delawares. The well known tradition of these last is given by Beatty and Heckewelder and in the famous *Walam Olum*,[1] according to which the Delawares came from the west, crossed a great river called Nemassipi, or Fish river, drove out a people called Talligewi, and finally pushed east to the river Delaware and the sea coast. Some investigators have sought to identify the Nemassipi with the Mississippi and some with the St Lawrence; all that seems certain is that the tribe believed itself to have come from the west or northwest at about the same period as the Iroquois, Nanticoke, and Shawnee. The origin of the Nanticoke of Chesapeake bay is thus bound up with that of the Delawares, and from some scraps of the languages of the Conoy, Powhatan Indians, and Algonquians of Albemarle and Pamlico sounds it is probable that they belonged to the same group and had the same origin. As much may be said of the Mohegan, Mahican, and Pequot of eastern New York and western New England. No legends pointing to tribal movements seem to have been recorded from the Indians of the Massachuset group, but archeological and other evidence appears to point to immigration from the southwest. Rand says of the Micmac,

[1] Thomas, op. cit., pp. 11–18.

that they always asserted that their former home was in the southwest also;[1] and Boyle, in quoting Rand, adds "the southwest origin was claimed by all the Abenaki tribes."[2] No authority is given for this last assertion, but it would probably follow if the corresponding legend of the Micmac were correct. Turning to the northern and western Algonquian group we find that the Naskapi believed they had been driven into the inhospitable regions of northern Labrador by the Iroquois.[3] The Cree and Montagnais appear always to have occupied much the same region as that in which we find them today, though the latter have displaced Eskimo from the north shore of the Gulf of St Lawrence, while the former have extended themselves somewhat to the north and west. According to our earliest records the Sauk Indians once lived in the neighborhood of what is now Saginaw bay and later moved or were driven beyond Lake Michigan, to the west of the Winnebago. There is slight evidence pointing to a similar early location for the Fox Indians, but it is by no means as definite. Nevertheless the languages of the two tribes are so nearly related that their close association at some period in the not distant past can not be doubted. Another language belonging to the same group is Kickapoo, and Shawnee is but little removed. The traditions of the last point to the north.[4] The Menominee appear to have lived long in the region where they are still to be found; at least no migration tradition has been recorded from them. From their linguistic connections it is probable that the Illinois and Miami had moved, like the tribes just considered, from north to south, and this is to some extent confirmed by the earliest historical references to them, though no actual migration traditions have come down to us. When we first hear of the Illinois some of them were in Wisconsin, some, including the Kaskaskia, in northern Illinois, while the Metchigamia had recently migrated much farther south into the present Arkansas. The Miami also appear to have drifted from southern

[1] Ann. Arch. Rep. for 1905, App. to *Rep. of the Minister of Education*, Ontario, p. 154.

[2] Ibid.

[3] *11th Ann. Rep. B. A. E.*, p. 267.

[4] *Trans. Kansas State Hist. Soc.*, x, 383.

Wisconsin toward the southeast as far as southwestern Ohio. The Monsopelea, who probably belonged to this group though we know very little about them, were driven out of Ohio or Indiana by the Iroquois and settled far down the Mississippi, finally uniting with the Taensa.[1] When we first hear of them the Potawatomi were in the lower peninsula of Michigan, but the Ottawa now found there have moved over in historic times from Manitoulin island and the neighboring shores of Lake Huron. The Chippewa now inhabit both shores of Lake Superior, but they entertain a general belief that they once lived farther toward the east. Within historic times they have driven the Dakota from Mille Lacs, and this may have been only a late stage in a very much older aggressive movement, since they are said to have had a tradition that they first encountered the Dakota at the Sault. If any reliance could be placed upon this story it would indicate that they were at one time living north of Lake Huron, though we may discount Warren's belief that their original home was on the Atlantic coast. Some of this western migration was, however, due to the acquirement of firearms by the eastern tribes and a consequent temptation to take advantage of those farther away who had not yet obtained them. Upon the whole we may perhaps consider the territory of the true Algonkin, who belonged to this group and lived between Ottawa river and Georgian bay, as lying nearest the center of the most ancient region occupied by Indians of the Chippewa division.

According to Mackenzie, Maclean, and Grinnell the origin legends of the Blackfoot point toward the east or north, but this has been disputed by other writers.[2] That the nucleus of the tribe was Algonquian there can be no doubt, but it is equally evident from the language that they have been seriously influenced by other peoples. From the first fact a presumption is raised that the larger portion of the people now known as Blackfoot had moved westward. This is as far as we can go at the present time. Cheyenne tradition carries that tribe back to Minnesota river and

[1] Margry, *Découvertes*, I, p. 566.

[2] For an extended discussion see Wissler, *Anth. Papers Am. Mus. Nat. Hist.*, vol. V, pt. I, pp. 15–18.

thus to the neighborhood of other Algonquian peoples.[1] At some prehistoric period the Arapaho and Atsina separated from some common body the home of which is unknown though there are scanty indications pointing to the neighborhood of Red river.

VII. — The Beothuk

Newfoundland was formerly occupied by a people called Red Indians or Beothuks. The remnant of their language preserved to us shows some Algonquian affinities, but it varies so greatly that for the present it has been thought best to consider it an independent stock. In the first half of last century these Indians were exterminated by the whites and Micmac who took their places. It is believed that some escaped to Labrador, and that there were a few survivors has been proved by Dr Speck who had the good fortune to meet an individual descended from the Beothuk tribe. As an independent people, however, they have been long extinct. Willoughby inclines to the opinion that there may have been some connection between the Indians of this tribe and the " red-paint people " of Maine.[2] If this could be demonstrated it would extend the territory and increase the prehistoric importance of the Beothuk very considerably.

VIII. — The Eskimo

The Esquimauan stock occupied a long, narrow fringe of shore from the eastern coast of Greenland and the northern side of the Gulf of St Lawrence to the easternmost points of Siberia and southward on the Alaskan coast as far as Copper river. The Aleut of the western portion of Alaska peninsula and the Aleutian islands constitute a subgroup of the same stock, offering many points of divergence from the normal Eskimo. Formerly it was customary to separate the people of this stock from all other Americans and to assume a more intimate connection between them and the Ural-Altaic peoples of Asia. Nevertheless the language of the Eskimo is distinctly American in type. Moreover traditional and ethnological evidence alike point to a comparatively recent coloni-

[1] Mooney, *Mem. Am. Anthr. Asso.*, vol. 1, pt. 6, pp. 363–4.

[2] Willoughby in *Arch. and Eth. Papers Peabody Museum*, vol. 1 (No. 6), pp. 50–52.

zation of Siberia from the American side,[1] and it seems certain that the Aleutian islands were also occupied from Alaska, since the Commander group, natural stepping stones between the Aleutians and Asia, were found uninhabited by their Russian discoverers, and they were the refuge of the sea cow, sure to have been exterminated had the islands been occupied for any considerable period.[2] Again the culture and mythology of the Alaskan Eskimo are strikingly different from those of the typical Eskimo farther east. It is, furthermore, unlikely that Siberia should have remained uncolonized until after all of the Alaskan coast afterward held by the Eskimo had been settled, and, if that occupancy was comparatively recent, the occupancy of the Alaskan coast south of Bering strait was probably recent also. From Norse chronicles we know that the Eskimo occupancy of Greenland began in the fourteenth century, and studies made by Thalbitzer on the languages of this stock indicate that the Labrador tribes also moved into their country from the west.[3] Thus the evidence so far collected points to an expansion outward from some middle region, between Baffin land and the Mackenzie river.

IX. — Indians of the Caddoan Stock

The earliest inhabitants of our central and southern plains beyond the Missouri belonged to the Caddoan stock, of which, in early historic times, there were three divisions. The largest of these covered most of northwestern Louisiana, southwestern Arkansas, southern Oklahoma, and northeastern Texas. It consisted of a large body of closely related people from which the stock itself derives its name of Caddo, the Wichita and their allies, and the Kichai. The second group centered on the Platte and Republican rivers in the present Nebraska and Kansas, and consisted of the four Pawnee tribes—the Skidai, Chaui, Pitahauerat, and Kitkehahki. Finally there was a northernmost group on the Missouri river, in the present states of North and South Dakota, constituted by the Arikara.

[1] Some additional proof is announced by V. Stefánsson in the *Summary Report of the Geological Survey, Canada, for the calendar year 1912*, pp. 488–489.

[2] Dall in *Cont. N. A. Eth.*, vol. 1, pp. 93–106.

[3] *Bull. 40, B. A. E.*, pt. 1, pp. 971–972.

Traditional and early historical references as well as similarity in language all point to a separation of the last mentioned body from the Skidi Pawnee at a comparatively recent period. Of the Pawnee tribes proper the Skidi were to the north of the others and seem to have considered themselves original inhabitants of the country occupied by them when first discovered. According to Mr James Murie two of the remaining tribes placed their original homes in the east, one as far as the Ohio, while the last claimed to have come from the southwest. The Wichita are merely the largest and most representative of a group of seven or eight allied peoples most of whom have been absorbed by them. When first encountered by whites they were camping along Arkansas river and its branches.[1] Late in the eighteenth or early in the nineteenth century, however, they were pressed out of this country by northern and eastern tribes and moved southwest, first to the North Canadian, later to the Wichita mountains.[2] There is no tradition pointing to any region outside of this area. The Kichai were formerly on the upper waters of Red river whence they were gradually forced down upon the Trinity. No Kichai migration legend has come to our attention.

The Caddo proper also seem to have partaken of the comparatively immobile character of the tribes of this stock. They were found by the De Soto expedition, in the region later associated with them, and there is no legend pointing to a place of origin or habitation anywhere beyond. Sibley cites a tradition to the effect that the Kadohadatcho, the leading eastern Caddo tribe, had formerly lived at the Cross Timbers, 375 miles above their later seats,[3] but this does not indicate any general movement on the part of all of the tribes. An origin myth collected by one of the writers from a Natchitoches Indian takes us back to the neighborhood of Lake Sodo.

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[1] *Handbook of Am. Indians*, article Quivira. La Harpe in Margry, *Découvertes*, vol. VI, p. 289.

[2] Gatschet in *Am. Antiq.*, Sept. 1891, pp. 249–252.

[3] *Annals of Cong.*, 9th Cong., 2d sess., 1085.

X. — Indians of Southern Texas

South of the Caddoan peoples were a vast number of Indian tribes now classified into three linguistic stocks called Tonkawan, Karankawan, and Coahuiltecan, but there are reasons for believing that more complete linguistic data (which unfortunately it will be difficult to obtain from any but the first mentioned) would show these to be related. And it is also probable that they would be found to have a connection with the ancient inhabitants of the northern and central parts of the state of Tamaulipas, Mexico. Further than this we have practically no information, no migration traditions having been preserved and little information of any kind regarding them having been recorded.

XI. — The Kiowa

The Kiowa, constituting the Kiowan linguistic stock, are associated in history with the southern plains, but about 1780 they were in the Black hills and their own traditions as recorded by Mooney carry them back to the head waters of the Missouri in western Montana. Mooney believes that their affiliation is rather with the tribes west of the Rocky mountains than with those on the eastern side, and recent investigations would seem to confirm this view.[1]

XII. — Indians of the Athapascan Stock

We now turn to the great western division of stocks referred to at the beginning of this paper.

In point of territory covered, the Athapascan family equals, if indeed it does not outrank, the Algonquian, which is usually considered the largest of all the stocks in North America. Geographically the Athapascans fall into three separate groups, Northern, Pacific, and Southern. The first, and by far the largest of these, comprises the various tribes sometimes known collectively as Tinneh or Dené. In one immense continuous area they spread over the whole of the interior of Alaska, northern British Columbia, and the Mackenzie basin, extending over about 65° of longitude and

[1] Mooney in *17th Ann. Rep. B. A. E.*, pp. 151–155. See J. P. Harrington in *Am. Anth.*, XII, 119–123.

nearly 20° of latitude. Among the more important of their many tribes were the Dog-ribs, Yellow-knives, Chipewyans, the various Kutchin divisions, the Nahané, Carrier, and Chilcotin. A small isolated tribe, the Sarsi, lived with the Algonquian Blackfoot in southeastern Alberta and northern Montana. The Pacific group includes a small isolated band in southern British Columbia, together with others in western Washington, and a series of small tribes stretching in a nearly continuous strip along the Oregon and California coasts between Umpqua and Eel rivers. The southern division, of which the most important members were the Navaho and Apache, occupied a large area in eastern Arizona, western and southern New Mexico, and southwestern Texas extending southward some distance into the Mexican states of Chihuahua and Coahuila. A small isolated group of Athapascan people, the Kiowa Apache, were with the Kiowa in the southern Plains.

The historical problems presented by the Athapascan stock are among the most difficult as well as most interesting in the northern continent, and there is much difference of opinion not only in regard to the movements of the various individual tribes and branches, but also concerning the relations of these branches within the stock. For the northern branch, migration traditions have been recorded chiefly from the tribes of the Mackenzie basin. These were first given by Mackenzie himself [1] and have since been secured by others, notably by Petitot.[2] Most of these accounts seem to be in accord in placing their earlier home far to the west, either across the sea or on the other side of a long lake full of islands. From this western land they were driven by the cruelty and fierceness of their neighbors, and after long travel and many difficulties came into their historical habitat. Some versions of the tradition make this western home a sort of terrestrial paradise, and it is uncertain how far the accounts are to be taken as purely mythical. Little or no information has been gathered from the Alaskan tribes as yet, and until more abundant material is at hand, it is premature to try to draw conclusions. The most that may be said is that

[1] Mackenzie, *Voyages*, etc., p. cxviii.

[2] Petitot, *Monographie des Dènè-Dindjié*.

attempts to derive the northern Athapascans from Asia on the basis of these traditions are absurd. The only really definite indication of migration in this northern group is in the southward movement of the Sarsi, who separated from the main body to the north, and allied themselves with the Blackfoot. A similar origin seems to be indicated for the small tribe formerly living in the Nicola valley in southern British Columbia.

The scattered tribes or bands forming the Pacific group seem to possess no trace of any traditions of migration, and all, without exception so far as is known, locate the creation of their first ancestors within the territory where the bands were living at the time of first European contact. Their general distribution, however, is such as to indicate a movement parallel to the coast and presumably, in conformity with other tribes in this region, from north to south. From the completeness of their adaptation to the environment it would seem that the original immigration into this coastal area must have taken place at an early period.

The two great tribes which together comprise the larger portion of the southern group present an interesting problem. Two contrasted points of view are held. Hodge,[1] relying on the statements of early Spanish writers and explorers as well as native traditions, believes that the Apache moved westward from eastern New Mexico and had not reached Arizona until after the middle of the 16th century. On this theory they would be thus comparatively recent comers in the Southwest, where they have, with the usual readiness of the tribes of Athapascan stock, adapted themselves rapidly to their new environment, and borrowed many elements of their culture from the sedentary Pueblo tribes with which they came in contact and portions of which they completely absorbed. The Navaho on this theory are believed to have appeared originally about the end of the 15th century in northern New Mexico. At first an insignificant tribe, they grew gradually, in part by absorption of other elements derived from the Rio Grande pueblos, the Zuñi, the Ute, and the Yuman stock, and in part by incorporation of portions of the affiliated Apache, and in this way extended their

[1] Hodge, The Early Navaho and Apache, *Am. Anthr.*, 1895, VIII, pp. 223–240.

territory westward far into Arizona. Goddard[1] on the other hand, relying more on cultural and linguistic considerations, believes that the evidence brought forward by Hodge is inconclusive, and that the Apache and Navaho are on the contrary old residents of the Southwest, having become completely assimilated to the environment in a way impossible if they were recent comers. The migration and origin legends regarded by Hodge as in large part really historical are thus considered to be almost wholly mythical and to have little or no value as indicating tribal movements. The final solution of this problem must await fuller archeological evidence. For the small isolated tribe of the Kiowa Apache—whose affiliations seem clearly with the northern group—we have distinct traditions of their meeting with the Kiowa at the time when these were still in Montana, and of their accompanying them in their southward movements in the Plains.

The larger problem of the movement of the Athapascan stock as a whole has usually been answered by assuming a southerly drift by which portions, breaking away from the parent body in the north, have wandered southward through the Plains as far as New Mexico and Arizona, the Sarsi and Kiowa Apache being laggards or remnants left behind. The Pacific group were thought to be either portions of these who passed west across the Rockies, perhaps down the Columbia, and then from its mouth down the coast as far as California, or else a separate migration from the westerly portion of the northern parent stock passing directly south along the Pacific shores, and of which the Washington and southern British Columbian fragments represented the laggards or latest comers. This view has been opposed by Goddard[2] who believes that the exact contrary is not improbable, and suggests that a further possibility is that the stock formerly had a continuous distribution but has been disrupted by the intrusion of other peoples. Until, however, more conclusive proof in favor of a northward movement or of a disruption by force is brought forward, the theory of a southerly drift seems best to fit the facts.

[1] Goddard, *XVth Congress of Americanists*, I, pp. 337–359.

[2] Ibid.

XIII. — Indians of the North Pacific Coast

We may divide the Indians of the north Pacific coast roughly into two sections, a northern composed of the Chimmesyan, Skittagetan, and Koluschan stocks, and a southern, mainly represented by the Wakashan and part of the Salishan peoples. Among the former the Chimmesyans stand entirely apart, linguistically and to a certain extent culturally. They consist of three tribes, the Tsimshian on Skeena river, the Niska on Nass river, and the Kitksan on the headwaters of both these streams. Although typically a coast people their traditions all point to an inland origin, at least as far back from the coast as the present territory of the Kitksan. The Skittagetan stock, embracing the people more often known as Haida, was located on the Queen Charlotte islands, British Columbia, and the southern end of Prince of Wales island, Alaska. The traditions, both of the Haida themselves and the other Alaskan Indians, show that those Haida now on Prince of Wales island emigrated to that region some time in the early part of the eighteenth century.[1] The traditions of the Queen Charlotte Islands Haida carry us to the eastern shore of the islands, particularly to the northeastern point and to the southern end.[2] The Koluschan stock, embracing the Indians usually known as Tlingit, extended over all the coast and islands of the panhandle of Alaska, with the exception just indicated, and beyond as far as the mouth of Copper river. The traditions of the greater number of their clans point to an origin on the Nass river to the south, but that of the K!âckeqoan brings them from among the Athapascan tribes on Copper river, that of the Nanyaayi points to an origin inland from Taku inlet, and that of the Qatcądi to the interior along the upper Skeena.[3] On the other hand several Tlingit clans are now represented among the Tahltan of the upper Skeena by later settlement or intermarriage from the coast,[4] and the Tägish of Chilkat pass are said to be a Tlingit offshoot.[5] This last statement, however, is probably an

[1] Dawson in *Rep. Geol. Survey Can.*, for 1879, p. 104B. Swanton in *Mem. Am. Mus. Nat. Hist.*, VIII, pp. 88–90.

[2] Swanton, ibid., p. 72 et seq.

[3] Swanton in *26th Ann. Rep. B. A. E.*, p. 410; also cf. p. 411.

[4] Emmons in *Anth. Pub. Univ. of Pa.*, vol. IV, no. 1, pp. 11–21.

[5] Dawson in *Rep. Geol. Surv. Can.*, 192B, 1887.

error. Within comparatively late historic times the Tlingit have moved farther west toward Copper river, and have modified an Eskimo tribe on Kayak island, the Ugalakmiut, to such an extent that these are now indistinguishable from the Tlingit proper, having adopted their language as well as their customs.[1] The Tlingit and Haida languages furnish still further evidence of an inland origin, the resemblance between at least Tlingit and Athapascan being very marked.

The Wakashans consist of two branches, the Kwakiutl of Queen Charlotte sound and the coast northward to Kitamat, and the Nootka of the west coast of Vancouver and the extreme northwestern point of Washington. Many of these tribes are divided into family groups which trace their origin from an ancestor who descended from the sky and settled at such and such a place. As village sites are usually to be found at the places indicated it is probable that they were in fact formerly occupied by the people in question. Nevertheless these sites are all in the same region and do not indicate any movement *en masse* from elsewhere.[2]

The Salishan tribes may be divided roughly into the coast Salish and the interior Salish. The former were on Georgian straits, the Straits of Fuca, Puget sound, and on the outer coasts of Washington and Oregon—with the exception of the Columbia river entrance, and the northwestern corner of Washington state—as far south as Siletz river. Still farther north, on North and South Bentinck arm, Dean inlet, and Bellacoola river, was a detached body known as the Bellacoola. These seem to have migrated from the coast Salish farther south, but along the heads of the deep inlets instead of by the outer coast. The interior Salish occupied a large part of the lower Frazer valley, including the valley of the Thompson, the upper valley of the Columbia, and as far east as the headwaters of the Missouri. While no memory appears to have been preserved of movements among these people in great bodies, there is reason to believe that the coast Salish originally pressed down from the interior. At least Boas is able to say that "both linguistic and archaeological indications sug-

[1] Petroff in *Tenth Census*, vol. VIII, p. 146.

[2] Boas in *Rep. U. S. Nat. Mus.*, for 1895, pp. 328–334.

gest that the Salish tribes which now inhabit the coast of the Gulf of Georgia separated from the Salish tribes of the interior at a time when both had the simple form of culture that seems to be characteristic of the whole plateau area and of the Mackenzie basin."[1]

The Chimakuan stock consists, or rather consisted, of but two tribes, the Chimakum about Port Townsend, Washington, and the Quileute on the northwestern coast of the same state. It is believed that a closer study of the Chimakuan language may show some connection with Salish.

XIV. — The Kutenai

The Kitunahan stock consisted of the Kutenai tribe only. Its historic seat was in southeastern British Columbia along the west flanks of the Rocky mountains, extending also slightly into the present United States. Chamberlain says regarding the origin of these people: "Their traditions suggest that they are comparatively modern intruders into this area from some quarter to the east of the Rockies, possibly around the headwaters of the Saskatchewan."[2] Their language shows some points of resemblance with those of the Shoshonean group.

XV. — The Shahaptians and the Indians of Western Oregon

The Shahaptian area included a considerable territory in the vicinity of the Columbia and Snake rivers, in southwestern Idaho, southeastern Washington, and northeastern Oregon. The best known of the several tribes composing the stock was the Nez Percé. Very little information is available in regard to the early history of these tribes, which were first met by Lewis and Clark at the beginning of the last century. The Nez Percé themselves seem to have been long in their historic habitat; on the other hand the Klikitat appear to have begun a movement westward across the Cascades not long before European contact, and to have thus paralleled north of the Columbia the movements of the Molala south of it.

[1] Ann. Arch. Rep. for 1905, App. to the *Rep. of the Minister of Education*, Ontario, p. 225.

[2] Chamberlain in *Ann. Arch. Rep.*, op. cit., p. 178.

A number of small, apparently independent linguistic stocks occupied the western portion of Oregon at the time when it first became known to Europeans. These were the Chinookan along both banks of the Columbia from the Dalles to the sea; the Kalapooian in the Willamette valley; the Kusan about Coos bay; the Siuslauan and Yakonan just north of these along the coast; the Takelman isolated among Athapascan peoples on the middle Umpqua; the Waiilatpuan in two separate areas, one along the western slope of the Cascades south of the Columbia, and one southeast of the bend of the Columbia at Wallula; and lastly the Lutuamian, who occupied the southern Cascades, mainly on their eastern slope, and the basins of the Klamath lakes.

For the majority of these, no traditional or other evidence of migration is available. Exceptions are in the case of the Molala who are said by the Cayuse (the eastern branch) to have separated from them, and to have crossed the Cascades toward the west to their historic sites. As the two dialects are quite distinct, this separation must have occurred at an early time. The Klikitat and some other Shahaptian tribes also seem to have been pushing north and west.[1] For the Kalapooians there is some evidence of a southward movement of slight extent, toward Umpqua valley.

XVI. — Indians of California

The Californian area presents a somewhat troublesome problem. Powell divided the languages of the state into twenty-two separate stocks, with the result that this region appeared to be linguistically one of the most complex in the world. Recent investigations however by Kroeber[2] and one of the authors and also by Sapir[3] make it very probable that the many stocks of Powell may be reduced to nine or ten, of which three (Shoshonean, Athapascan, and possibly Algonquian) are mainly extra-Californian families.

Of the newly determined families, the largest is the Penutian, occupying a continuous area which may be roughly described as

[1] Lewis, *Mem. Am. Anthr. Asso.*, vol. I, pt. 2, pp. 195–196. Gibbs in *Cont. to N. A. Eth.*, vol. I, p. 224.

[2] Dixon and Kroeber, *Amer. Anthr.* (N. S.), XV, pp. 647–655.

[3] Sapir, ditto, pp. 617–646.

including the whole of the Great Valley together with the coastal region south of San Francisco to beyond Monterey. This includes the former Wintun, Maidu, Miwok, Costanoan, and Yokuts stocks. No definite traditions of migration have been found among any of the members of the Penutian family, but on linguistic grounds there would seem to be some evidence of a former continuity of the Maidu and Yokuts groups, now separated by the intervening Miwok; and in general of a spreading outward from the central portion of the state along the courses of the Sacramento and San Joaquin rivers.

The second large Californian stock is the Hokan, whose territory is much broken up. In the north it comprises the region occupied by the Shastan, Chimarikan, and probably the Karok and Yanan groups as well. Separated from these and farther south are the Pomo, along the coast and in the Coast Ranges north of San Francisco; the now extinct Esselen on the coast south of Monterey; and the Yuman group of the extreme south of the state and in western Arizona. As in the case of the Penutian stock, practically no traditional evidence is available indicating any migratory movements except the slight indications shown by the Yuman branch.

The area occupied by Yuman tribes comprised southwestern Arizona, the extreme southern portion of California, and the northern portion of the peninsula of Lower California. As in the case of most tribes west of the Rockies, there is little traditional evidence of migration. In one or two cases, however, there are some facts which may be significant. Thus the Havasupai now living in Cataract canyon (a tributary of the Colorado just west of the Grand canyon) have traditions of having lived formerly farther to the south, along the Little Colorado and upper Verde rivers. The Yavapai on the other hand, would seem to have moved from a position along the Colorado near the mouth of Bill Williams fork, eastward toward central Arizona. A somewhat similar eastward movement also occurred in the case of the Maricopa who moved during the 19th century from a position near the mouth of the Gila to one near its middle course. Except for the Havasupai, who acquired not a little of the characteristic culture features of

the Pueblo tribes, the general type of Yuman culture is reminiscent of California, and would suggest an earlier home in that direction.

The Shastan group shows some indications of a southerly movement, and general considerations—cultural, linguistic, and geographic—make the supposition of a similar tendency for the whole stock probable. How far the intrusion of the Athapascans has been responsible for this it is as yet impossible to say; the possibility of disruption due to this cause and to the expansion of the Penutian stock must certainly be considered. It seems probable, however, that any such movements, both in this case and in that of the Penutian stock, must have taken place at a very early period.

For the other Californian stocks, there is little evidence at hand. The Yuki, who are in three separate divisions, two north of and one south of the Pomo, show evidence of disruption by the intrusive Athapascans, and of an older separation by which the southern or Wappo group were divided from the parent stock. The Washo in the region about Lake Tahoe on the eastern border of the state show no indications of movement in any direction. For the Salinan and Chumash stocks of the southern coast also there is no traditional or other evidence which would show tribal movements, and it is probable that they have been for a very long period in occupancy of the region in which they were found by the earliest European explorers.

XVII. — Indians of the Shoshonean Stock

The Shoshonean tribes stand at present in a somewhat uncertain position as regards their linguistic independence. Since the middle of the last century [1] a feeling has been growing that the Shoshonean languages should be grouped with the Piman and Nahuan to form a larger stock or family, called by Brinton [2] the Uto-Aztecan. Leaving this question aside for the moment, however, the history of the Shoshonean branch can be briefly summarized.

The area covered by tribes of this group at the time of their

[1] Buschmann, *Spuren der aztekischen Sprache*, Berlin, 1859.

[2] Brinton, *American Race*, p. 118 sq.

earliest contact with Europeans was, with two exceptions, a continuous one. The mass of the people lived almost wholly within the region generally known as the Great Plateau, and comprised southeastern Oregon, southern Idaho, southwestern Montana, western Wyoming and Colorado, the whole of Utah and Nevada, together with most of California south of the Tehachapi and a narrow strip along its eastern border. The two outlying tribes were the Hopi, whose villages lay in northern Arizona, and the Comanche, who ranged over the southern Plains. On a linguistic basis [1] the Shoshonean tribes may be divided into four very unequal subdivisions: the Pueblo (comprising the Hopi only); the Plateau (the most important tribes being the Ute, Shoshoni, Comanche, and Paiute); the Kern River; and the Southern California (including the Serrano, Gabrieleño, Luiseño, Cahuilla, etc.).

Little has been recorded for any of these tribes, except the Hopi and Comanche, in the way of migration traditions. The Hopi were of complex origin, and will be considered along with the other Pueblo Indians. The Comanche are linguistically closely related to the Shoshoni of Idaho and Wyoming, and there is traditional evidence [2] of their being residents of that section early in the 18th century, and that they were driven by other tribes from this northern home southward along the western edge of the Plains. At this same period, probably, the Shoshoni were forced west across the Rockies to their h storical site. Brinton [3] and others have held that this latter movement indicated a former residence of the whole stock in the region between the mountains and the Great Lakes; and Powers [4] supposed the southern California tribes to be recent intruders there from the eastward. There seems, however, to be little ground for either of these assumptions, and the evidence, both linguistic and cultural, would appear to show that the tribes composing the Shoshonean group have been in occupancy of the Great Plateau and of southern California for a very long time.

[1] Kroeber, *Univ. Cal. Pub. Amer. Arch. and Eth.*, IV, p. 97 et seq.

[2] Clark, *Indian Sign Language*, p. 118.

[3] Op. cit., p. 121.

[4] Powers, *Tribes of California*, p. 369.

XVIII. — Indians of the Piman Stock

The Piman family holds still, like the Shoshonean, a somewhat uncertain position in regard to its linguistic independence, and it is probable[1] that with the Shoshonean and Nahuan it forms merely a branch of the larger Uto-Aztecan stock. The larger part of the territory occupied by this group lies in northwestern Mexico, in the states of Sonora, Chihuahua, Sinaloa, and Durango, with extensions still farther south; of the tribes in the United States the Pima and Papago are the most important, and occupied in the 18th century a considerable area in southern Arizona.

The origin tradition of the Pima[2] refers to the Salt River valley as the region where the tribe had its beginning, and states that their ancestors moved thence southward to the Gila; much later, under the attack of enemies from the east, a portion moved into Mexico while others went northward to join the Zuñi and Hopi.[3] Other traditions refer to an earlier eastern home.[4] That the Pima had been long settled in the southern portion of Arizona seems indicated by the abundant ruins throughout the area, the majority of which, including the famous Casa Grande, are attributed to their ancestors.[5] The fact that linguistically the Piman languages stand closer to the Shoshonean than they do to the Nahuan dialects[6] and that geographically they are intermediate between these two branches of the Uto-Aztecan family, may perhaps be taken as indicating a general southerly drift for the entire great group. More definite knowledge of the culture and archeology of northwestern Mexico is, however, necessary before any certain conclusions can be reached.

XIX. — The Pueblo Indians

There is very little information available regarding the migration traditions of the Pueblo Indians outside of the Hopi and the Zuñi. All that we can make out is a widespread belief that the

[1] Kroeber, op. cit., p. 164.
[2] Russell in *26th Ann. Rep. B. A. E.*, pp. 206–230.
[3] Fewkes in *28th Ann. Rep. B. A. E.*, pp. 153–160.
[4] Russell, op. cit., p. 26.
[5] Fewkes, loc. cit.
[6] Kroeber, op. cit., p. 163.

people had come up from the underworld at some point in the north. According to Cushing the Zuñi were composed of two elements, an earlier element, the traditional origin of which was identical with that given above, and a later element from the west or southwest.[1] According to Dr Fewkes the Hopi were formed by three prehistoric immigrations, the first of which, consisting of the Honau or Bear people and Kokop or Firewood people, he believes to have come from the Rio Grande region, tradition specifying Jemez. Secondly came the Snake people from the San Juan region in the north, who settled first on the Little Colorado west of Walpi, and finally came to Tusayan. The third and last consisted of what is now the Patki people who came up from the Gila valley, and were perhaps of Piman origin. They were very likely of the same stock as the southern immigrants into Zuñi. Within historic times, especially since the rebellion of the Pueblos against the Spaniards in 1680, several other movements have taken place. Thus the Asa, a Tewa people, moved to Zuñi and from there again to Hopi, founding the Pueblo of Sichomovi, called "the Zuñi town." About 1710 came the Hano people, also of Tewa stock, and founded the pueblo of that name where the Tewa language is still preserved. Some Keres also came to Hopi, but the bulk of them afterward left and founded Sandia. Over and above these great migrations movements of small bodies of persons frequently occurred, sometimes perhaps of two or three people only, but this served to spread clans from one pueblo to another and to increase the complexity throughout.[2]

XX. — Conclusion

Let us now recapitulate briefly. From the data available it appears that the origin of the tribes of several of our stocks may be referred back to a swarming ground, usually of rather indefinite size but none the less roughly indicated. That for the Muskhogeans, including probably some of the smaller southern stocks, must be placed in Louisiana, Arkansas, and perhaps the western parts of Mississippi and Tennessee, although a few tribes seem to

[1] Cushing in *13th Ann. Rep. B. A. E.*, p. 342.

[2] Fewkes in *19th Ann. Rep. B. A. E.*, pp. 573–634.

have come from the region of the Ohio. That for the Iroquoians would be along the Ohio and perhaps farther west, and that of the Siouans on the lower Ohio and the country to the north including part at least of Wisconsin. The dispersion area for the Algonquians was farther north about the Great Lakes and perhaps also the St Lawrence, and that for the Eskimo about Hudson bay or between it and the Mackenzie river. The Caddoan peoples seem to have been on the southern plains from earliest times. On the north Pacific coast we have indications that the flow of population has been from the interior to the coast. This seems certain in the case of the Indians of the Chimmesyan stock and some Tlingit subdivisions. Some Tlingit clans, however, have moved from the neighborhood of the Nass northward. Looking farther south we find evidence that the coast Salish have moved from the inner side of the coast ranges, while a small branch has subsequently passed northward to the west of it. The Athapascan stock in all probability has moved southward, sending one arm down the Pacific coast, and a larger body presumably through the Plains which reached as far as northern Mexico. Most of the stocks of the Great Plateau and of Oregon and California show little evidence of movement, such indications as are present, however, pointing toward the south as a rule. The Pueblo Indians appear to have had a mixed origin, part of them coming from the north, part from the south. In general there is to be noted a striking contrast between the comparatively settled condition of those tribes west of the Rocky mountains, and the numerous movements, particularly in later times, of those to the east.

While we can hope for little more traditional evidence regarding the migrations of our Indians the collection of further ethnological material of all kinds is bound to cast a flood of light upon the whole question of tribal movements. More exact information regarding Indian languages will doubtless bring out new resemblances and contrasts, some of which will in time be shown to have historic value. Again, all of these tribes must be reclassified in accordance with the data yielded by physical anthropology as soon as those data are sufficiently complete. We already know that this classi-

fication will show a very different alignment of tribes, that in some cases linguistic stocks will be cut to pieces and in other cases brought together. This discordance, however, far from disturbing us, should be welcomed as giving a different angle of approach which will probably enrich rather than confuse our conception of aboriginal American history. The study of cultural features properly so considered will also yield certain valuable results, at least of confirmatory value, but less is to be expected from this branch of ethnology than from the two already considered. Culture, however, as well as physical anthropology, has one great advantage over language in that it can be enriched progressively by archeological investigations long after the living peoples are extinct, and there will come a time when the archeological method of approach will be the only method remaining.

AREAS OF AMERICAN CULTURE CHARACTERIZATION TENTATIVELY OUTLINED AS AN AID IN THE STUDY OF THE ANTIQUITIES[1]

By W. H. HOLMES

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Introduction

AS an initial step in the description and interpretation of the antiquities of the continent, the archeologist observes the tribes of today, their cultural characteristics and environments, and acquaints himself with what is known of them historically. He finds that their achievements are greatly diversified and that certain forms and states of culture characterize particular geographical areas and realizes that environment has had a large share in determining the course of the culture evolution. He examines the antiquities and finds that analogous geographical distinctions characterize the material culture of the past and reaches the conclusion that the relations of environment to man and culture

[1] The present paper is extracted from a work now in course of preparation which is intended to bring together in comprehensive form the antiquities of the continent; it is thus not complete in itself. The several areas are tentatively outlined to facilitate descriptive and comparative studies of the numerous classes of artifacts; and the brief sketches here presented are intended to familiarize the reader and student with the field as a whole and with the relative culture status of its more important subdivisions.

PLATE I.—CULTURAL CHARACTERIZATION AREAS OF NORTH AMERICA AS SUGGESTED BY A COMPARATIVE STUDY OF THE ANTIQUITIES

must play an important part in the prosecution of his researches and in the analysis of aboriginal history.

In the practical work of museum classification and arrangement—a work which has served in part to give form to this writing—archeological materials are necessarily grouped primarily by continents and other natural divisions, and secondarily by political divisions, such as states and territories. Separation by the larger natural divisions is always necessary, but separation by ethnic areas, or areas of culture characterization, as they are sometimes called, is most advantageous. These areas may be large or small according to the understanding or the needs of the student. By their means he approximates the real or natural grouping of the material traces of human achievement and studies to advantage culture and culture relationships and the causes of the resemblances and differences everywhere met with. The geographical limitations of culture units are, as a matter of course, not usually well defined. Cultures are bound to overlap and blend along the borders and more especially along lines of ready communication. But notwithstanding this, certain characteristics of achievement or groups of culture traits within each area will be found to separate it from its neighbors and afford effective means of comparison with other culture groups. In the present work, keeping in view the archeological rather than the ethnological evidence, it is convenient to recognize eleven areas north of Mexico (pl. XXXII), namely: (1) The North Atlantic area; (2) The Georgia-Florida area; (3) The Middle and Lower Mississippi Valley Region; (4) The Upper Mississippi and Lakes Region; (5) The Plains and Rocky Mountains; (6) The Arid Region; (7) The California Area; (8) The Columbia-Fraser Area; (9) The Northwest Coast Area; (10) The Arctic Coastal Area; (11) The Great Northern-Central Area. To these may be added (12) The Hawaiian Islands; and (13) The West Indies. These areas are here made as few and simple as possible to avoid too great complexity in conducting comparative studies of the several classes of antiquities.

The Middle and South American areas, also outlined on the broadest possible plan, are as follows: (1) Northern Mexico; (2)

Middle Mexico; (3) Southern Mexico; (4) The Maya Provinces; (5) The Central American or Isthmian Region; (6) The North Andean-Pacific Area; (7) The Middle Andean Pacific or Incan Area; (8) The South Andean-Pacific or Chilean Area; (9) The Amazon Delta Area; (10) Primitive South America, Northern Division; (11) Primitive South America, Southern Division. Detailed study of the antiquities and history of these vast regions might profit even in the initial stages of research work by further subdivision of the areas, but in the present restricted state of our knowledge this would not prove greatly advantageous, as it would prolong the summary review here contemplated without an equivalent in useful results.

These areas in all cases are based on the clearly manifested phases of their culture content. In some areas evidence has been reported of early cultures radically distinct from the type adopted as characteristic of the areas, and ancestral forms grading into the later and into the historic forms are thought to have been recognized. In these particular branches of the research, however, haste must be made slowly as the utmost acumen of the student is called for in making areal and chronological discriminations. It is anticipated, however, since the period of occupancy of the continent must have been of long duration, that not only early but more elementary cultures may in good time be identified.

Within the region north of Mexico the culture of the most advanced communities rises high in the scale of barbarian achievement—a status characterized by an artificial basis of subsistence, sedentary life, successful agriculture, and extensive town building, yet still far below the culture level of glyphic writing reached by the more advanced tribes of Middle America. Pictographic records carved on stone, engraved or painted on bark, and painted on surfaces of many kinds, were almost entirely pictorial or graphic, slight advance having been made in the use of purely conventional characters, save as separate symbols or as ornamental designs. The lowest stage ranges well down in savagery where art in stone in its rudimentary forms had barely obtained a sure foothold, as with the Seri and other Lower Californians.

In Middle and especially in South America the culture contrasts are even greater, and nations standing upon the very threshhold of civilization, with arts, industries, and institutions highly developed, are in close juxtaposition with utterly savage tribes to which even clothing and stable dwellings are practically unknown. With the exception of a limited group at the mouth of the Amazon, the more advanced cultures were confined to the west coast and the Andean plateaus, where forests are rare and deserts common, while the primitive status was and is yet found in places throughout the vast forest regions of the eastern slope of the Andes and the Orinoco-Amazon region, in the broad pampas of Brazil, Paraguay, and Argentina, and on the entire Atlantic coastal border from Panama to Tierra del Fuego, excepting always the limited areas about the delta of the Amazon.

These differences in culture status appear to be due to a complex of causes not readily analyzed. Whatsoever the nature of the molding agencies, they have acted to diversify, differentiate, and individualize cultures in a most pronounced manner throughout the two Americas, and the results, as suggested by a study of the several areas, are among the most striking and scientifically important features of our aboriginal ethnology.

The following sketches do not assume to approximate complete presentation of the cultural remains of the several areas; they are merely intended to cultivate familiarity with the vast field as a whole and to lay out its great features tentatively as an aid in describing and comparing the antiquities and the cultures they represent. It is by no means assumed that the culture phenomena of any considerable area are uniform throughout. There may be much diversity, possibly great complexity of conditions. There may be a number of somewhat independent centers of development of nearly equal importance, or a single center may have spread its influence over a wide area. The mapping of the cultures will, in the end, take forms that cannot now be foreseen. When all available relics of antiquity have been considered and their history and distribution recorded, discussion of the culture complex may be taken up to advantage, and, enforced by the somatic evidence and

illumined by the researches of ethnology, may round out the history of man in America with gratifying fullness.

THE NORTH ATLANTIC AREA

The north Atlantic characterization area, as outlined for present purposes, extends from Newfoundland and the St Lawrence valley on the north to Georgia on the south. It includes eastern Canada, New England, New York, Pennsylvania, Maryland, and large portions of Virginia, West Virginia, and the Carolinas. It is a region of splendid forests, rugged highlands, charming valleys, and a diversified coast line indented by many tidewater inlets, and the aborigines, largely of the Algonquian, Iroquoian, and Siouan stocks, were primarily hunters and fishers, although agriculture was practised successfully in many of the fertile valleys. The native culture of both colonial and precolonial times, so far as known, though varying with the widely distributed centers of habitation, was quite uniform in grade and general characteristics. It is well differentiated from that of the south and middle west, but passes with no abrupt change into that of the upper lakes and the great interior region of the north. The changes from north to south were due in large measure to differences in food resources and the influence of neighboring cultures.

The use of stone in building was practically unknown, the dwellings being constructed of bark and mats, and stockades were relied upon for village defense. Burial mounds and other earthworks in the area are rare or insignificant in size, save where the influence of the Mississippi valley culture was felt along the western border, but the shores are lined with shell-heaps often of great extent. Methods of burial were primitive and considerably varied, and the graves yield many examples of the simple artifacts employed by the people. Numerous caves and rock-shelters were occupied for dwelling and burial.

The ceramic art was in a somewhat rudimentary stage, although considerable skill and taste were displayed by the Iroquois in the manufacture of culinary utensils and tobacco pipes of clay. The vessels are round-bodied and often conical beneath, adapted thus

to earthen floors, and were decorated with incised lines forming simple geometric figures, with fabric or cord impressions, and often, among the Iroquois, with crude figures in relief. The tobacco pipes of this people are varied in form and elaborately embellished with modeled life forms. The Virginia clay pipe with long stem and upturned bowl, carried to England by the early colonists along with the first tobacco, gave form to the common clay pipe which prevails even today in the English-speaking world.

Of implements of pecked and polished stone, the grooved ax, celt-hatchet, chisel, pick, gouge-adz, mortar, pestle, slate knife, slate spearhead, and hammerstone are present in large numbers, and articles of faith and ornament include bannerstones, bird-shaped stones, plummets, tubes, pierced gorgets, etc. Chipped implements of all ordinary types are well made and plentiful, as are also shell beads, pins, and pendent ornaments. The engraved conch-shell gorgets of Virginia and the Carolinas are of particular interest, but it is probable that these should be regarded as culture intrusions from the west.

The tribes of this region surpassed their neighbors in the manufacture of a few varieties of artifacts only; their gouge-adz takes first rank among implements of this general class. Within the area there are a number of local features of particular interest, some of which are due to the occurrence of mineral deposits of exceptional character, while others are due to ethnical conditions not at present fully determined. Maine has furnished a group of relics of exceptional character, most noteworthy of which are certain long, slender celts and gouge-adzes, and ground and polished lance-heads, discovered and described by Willoughby and tentatively ascribed by him to some pre-Algonquian people. The occurrence of red oxides with the burials has led to the use of the designation "the Red Paint people." The resemblance of the lance-heads to those of the Eskimo and even to those of northern Europe and Asia is noted. The occurrence in New England and the eastern Lakes region of examples of the ground spearhead and the broad-bladed slate knife, the woman's knife of the Arctic, is also worthy of remark.

Deposits of soapstone occur throughout nearly all the states from Massachusetts to Georgia and were extensively worked by the aborigines for the manufacture of cooking utensils, tobacco pipes, and articles of ornament, and the stone pick-axes and chisels used in cutting out and shaping these articles constitute a unique feature in American archeology. Mica was mined extensively in Virginia and North Carolina, and quarries of argillite, jasper, and rhyolite are found in Pennsylvania, and of quartz and quartzite bowlder deposits in the District of Columbia. From the materials obtained in these quarries and from other widely distributed sources of supply vast numbers of chipped implements were made, as would be expected with a forest people devoted to war and the chase. It is stated that a single collector amassed, largely within the limits of a single county in South Carolina, twenty bushels of arrowheads. The coarse grain and refractory nature of most of the materials, however, rendered impossible the refined work which was produced in the areas to the west. Deposits or caches of large chipped blades, mostly of the narrow oblong type, have been found at many points throughout the area. The spear was not in general use on the arrival of the whites, the bow and arrow, the tomahawk (celt-hatchet), and club being the principal weapons. Dugout canoes and canoes of bark were in use, and occasional examples of the former have been uncovered in recent years. Petroglyphs of primitive type are found in all sections. The most noted example is that of Dighton Rock, Massachusetts, which has greatly puzzled antiquaries and has been the subject of much controversy.

Relics of stone and bone, believed to have had their origin in glacial and early post-glacial times, have been collected in the Delaware valley and elsewhere, but geologists are not yet agreed as to the exact age of the formations with which most of the objects are said to be associated. These artifacts are not specifically different from those of the Indian tribes, and whether they represent an earlier and a distinct culture from that of the remains of the region generally seems to be an open question. The possibilities are that, howsoever ancient the older traces may be, they represent continuous occupancy of the area by the same or related tribal groups.

A few remnants of the original tribes, mostly of mixed blood, still live within the more easterly and southerly states, while a considerable body of the Iroquois remains in the valley of the St Lawrence. That the tribes of this great region should have remained always in a state of culture so primitive while other areas witnessed advancement must be attributed in large part to the forest environment. In both physical and intellectual attributes they had few superiors on the continent.

Explorations have been conducted in this area by numerous students, prominent among whom are Kain in New Brunswick; Boyle and Laidlaw in Canada; Willoughby, Putnam, Cushing, McGuire, and Moorehead in Maine; Putnam and Chase in Massachusetts; Perkins in Vermont; Haldeman, Mercer, Holmes, and Wren in Pennsylvania; Beauchamp and Harrington in New York; Rau, Abbott, and Volk in New Jersey; McGuire, Holmes, Fowke, Dinwiddie, Kengla, Reynolds, and Proudfit in the District of Columbia and Virginia; Thomas, Holmes, and Bushnell in the Carolinas.

Early observers embodying in their works important data regarding the aborigines of the region are White of the Roanoke colony, Smith, Strachey, and Hariot of the Virginia colony, Burk, Beverley, Jefferson, Heckewelder, Kalm, Holm, Lawson, Adair, Bartram, and others.

THE GEORGIA–FLORIDA AREA

This area includes the Florida peninsula and part of southern Georgia. The aboriginal occupants, so far as known historically, were mainly of the Muskhogean and Timuquan stocks, a remnant of the former only, the Seminole, remaining in the peninsula today; and since the antiquities show no radical diversity of characteristics they may safely be assigned, in large part at least, to the ancestors of these groups. A colony of Cuban Arawak is said to have settled on the west coast of Florida in comparatively recent times, but no very distinctive traces of their presence have been observed. The early literature of the region, summarized by Brinton in *Notes on the Floridian Peninsula*, supplies many interesting details of the vanished peoples.

The antiquities of the area are somewhat distinctly set off from those of the North Atlantic area, but graduate almost imperceptibly into those of the Gulf states to the west and the great Mississippi valley area on the northwest.

Shell-heaps, often of remarkable extent, occur along the Atlantic and Gulf coasts, and on the river banks and lake shores. Some of these remain as originally deposited, while others have been more or less remodeled for purposes of dwelling, observation, or defense. Burial mounds, principally of earth and sand, are very numerous. The houses, built of poles and thatch, arranged often in circular village groups and surrounded by palisades, have left but meager traces. Communal houses mentioned by Cabeza de Vaca were so large that they "could contain more than 300 persons." The researches of Cushing demonstrated the fact that pile dwellings were in use along the Gulf coast, and also that canals and "water courts" were dug to accommodate the canoes of the villagers. Agriculture was practised in favorable localities, as recorded by the early explorers.

Knowledge of the native culture is obtained largely through a study of the contents of the burial mounds and shell-heaps, and more especially through a study of the earthenware, which is very plentiful and presents numerous features of interest. The forms were often pleasing, and in the west life forms were modeled with considerable skill. The figured stamp or paddle was employed in decorating the surfaces in the east and north, while engraved and indented designs are most common in the west. Curvilinear designs and peculiarly conventionalized life forms prevail, and some of these are thought to suggest Middle American influence. The use of color was elementary. Owing to the meagerness of sculptural remains pottery takes the place in large measure of stone art as a means of determining the culture status of the people.

The remarkable finds of Cushing in an ancient village site on Key Marco which, through the accidental inclusion of articles of wood, bone, and shell in deposits of muck in an old canal bed, give us a most instructive and interesting glimpse of the Gulf coast culture of which otherwise we should have remained in almost

total ignorance. The ceremonial masks, figurines, implements, and other carvings in wood, and the conventional and highly symbolic embellishments in color indicate a degree of artistic accomplishment not suggested by the few articles of stone and pottery found in the same connection or, for that matter, elsewhere in the south or west. That artistic development of such pronounced characteristics should be possible, practically without the aid of stone, is a matter of much interest to the student of culture history. It is probable that the culture was exotic in some measure. Implements of shell and sharks' teeth appear to have been the main reliance of the craftsmen of the keys.

Flint occurs in association with the extensive limestone formations of Georgia and northern central Florida, and was utilized by the natives in the manufacture of chipped implements of all the usual varieties; their abundance in Georgia is phenomenal. Varieties of stone usually employed in the manufacture of pecked-ground implements do not occur in the area, and implements of this type are comparatively rare with the exception of the celt which is found in large numbers in mounds and graves and on village sites; the grooved ax is of rare occurrence, a noteworthy circumstance since it is observed that this implement is abundant in the northern portions of most of the Gulf states and in intimate association with the celt. Moore's great collection of relics from the peninsular region includes hundreds of celts but not a single typical or fully specialized grooved ax. It is observed that while the celt is found in great numbers in the adjacent West Indies, the grooved ax does not occur there, the ax of the islands being of a totally distinct type. It is further observed that the celts of the Florida region approximate more closely those of the West Indies than do those of any of the more northerly districts, suggesting intrusion from that direction. An examination of the material of which they are made may serve to throw needed light upon their history.

Mortars and pestles of stone are of rare occurrence. Wood was in common use for these utensils, and examples of mortars and pestles, as well as dishes, stools, masks, and figurines, of this material,

exceedingly well made, were recovered by Cushing from the canal muck at Key Marco.

Numerous ornaments of gold and silver have been found in the peninsula. It is quite possible that some of the more elaborate pieces reached the peninsula from Mexico or Central America subsequent to the Columbian discovery, but that the native metal workers were highly skilled is amply shown by numerous examples of the overlaying of wooden ornaments and objects of bone with sheet copper and by certain plates of sheet copper collected by Moore which display symbolic devices executed repoussé fashion with much precision.

Burial places and mounds yield a rich harvest of relics. A feature peculiar to the peninsula is the inhumation with the dead of great numbers of crudely shaped objects of baked clay, vessels of fanciful shapes, and rude images of creatures and things real and fanciful, manifestly intended for no other purpose than as mortuary offerings. Urn burial, common in Georgia, was rare on the peninsula.

Decided relationships with the culture of Yucatan and the West Indies have been looked for in vain, yet certain analogies more or less pronounced do occur in pottery forms and decoration, in implements of stone and wood, and in the treatment of metals. The relationships are not intimate, but a glance at the general facies of the antiquities leaves the impression of trans-Caribbean kinship, which fades out as we penetrate the interior. A suggestion of cultural connection with South America is found in the frequent occurrence in this and other Gulf states of a perforated hoe-shaped stone implement which corresponds closely with a type of ax prevalent in South America. It is believed to have had only a ceremonial use north of the Gulf.

There has been some discussion of certain supposed evidences of the geological antiquity of man in Florida based on the discovery of human skeletal remains, apparently fossilized, embedded in geological formations in the western part of the state, but it has been shown that the age of these deposits is recent, the appearance of petrifaction being due to the coating and infiltration of cal-

careous and ferruginous matter present in solution in percolating waters. The most remarkable evidence of age is that furnished by the shell deposits, which are of great depth and horizontal extent and include varieties of shells not now prevalent on the coasts.

The superiority of the culture of this area over that of the North Atlantic region is manifest, especially in skill in the potter's art and in the manipulation of metals. On the whole, considering all branches, the material culture of typical centers differs but slightly in state of advancement from that of corresponding centers in the Mississippi valley. In some respects it is decidedly inferior to that of the more advanced culture centers of the West Indies.

The leading explorers of the antiquities of the Georgia-Florida area are: Brinton, Wyman, Webb, C. C. Jones, Bartram, Cushing, Moore.

THE MIDDLE AND LOWER MISSISSIPPI VALLEY AREA

The very extensive interior region, which comprises the middle and lower portions of the Mississippi valley with much outlying territory, was the seat of a remarkable group of peoples whose culture, all things considered, stands higher than that of any other characterization area north of Middle Mexico. This culture was characterized by well established sedentary life, extensive practice of agricultural pursuits, and construction of permanent works—domiciliary, religious, civic, defensive, and mortuary, of great magnitude and much diversity of form. The people, some if not all of whom were mound builders, were of numerous linguistic stocks, principal among which were the Siouan, Algonquian, Iroquoian, Muskhogean, Tunican, Chitimachan, and Caddoan; and these historic peoples, remnants of which are still found within the area, were doubtless preceded by other groups not of a distinct race but probably of the same or related linguistic families. This view, in recent years, has gradually taken the place of the early assumption that the mound culture belonged to a people of high cultural attainments who had been succeeded by the Indian tribes. That mound building continued down to the period of European occupancy is a well established fact, and many of the burial mounds contain as original inclusions articles of European make.

Traces attributed to very early occupants of the area have been reported from time to time, especially the osseous remains of man found in association with remains of the mastodon and mammoth. In nearly every instance, however, subsequent observations have thrown serious doubt upon the authenticity of the original association. A human skeleton, found recently embedded in terrace deposits near Lansing, Kansas, is assigned by some authorities to the Iowan phase of the glacial period, while others regard the inclusion as more recent. Certain relics of stone, attributed to glacial times, have been found in the Ohio and Mississippi valleys, and these await fuller investigation. Numerous crania of primitive type have been collected from ancient sites in the Missouri valley and claims to geological antiquity have been promulgated, but Hrdlička has shown that this type occurs among the modern tribes of the area. The region abounds in caverns, and many of these contain traces of occupancy, but none so far examined seems to include in their floor deposits remains of other than the well-known culture products of the Indian tribes.

Unfortunately for the antiquarian of today the peoples of this area did not construct their buildings of durable materials, and nothing is left to us of their architectural achievements save such works as employed earth and loosely laid stones. These works are now mere unshapely mounds and embankments. The buildings of the Natchez and other tribes of the south have been described by early writers, though imperfectly. The walls were often of wattle-work faced with plaster, and the roofs were of bark and thatch. Little that is specific can be ascertained regarding the character of the buildings which must have crowned such great mounds as those of Cahokia and Etowah, or as were associated with such remarkable works as those of Marietta, Newark, and Fort Ancient. Stockades often supplemented the embankments in defensive works and served to protect the villages from intruders. Modes of burial within the area were extremely varied, and a vast body of the minor works of the people were deposited as offerings with the dead in ordinary cemeteries, in stone graves of several types, and in earth and stone mounds. Shell-heaps, composed mainly of mussel

shells, border the rivers in some sections. They contain relics of art of the varieties prevalent in the respective localities.

The lithic arts were wonderfully diversified and in some respects highly developed. Sculpture of the human figure had, however, made but slight advance, save in connection with the carved tobacco pipes where much skill is shown. The mineral resources, in which the region is extremely rich, were well exploited and extensively utilized. Stone was employed in a limited way in building walls and fortifications and in the construction of graves, and desirable varieties were quarried on a large scale for the manufacture of implements, utensils, and objects of faith, ceremony, and ornament. Heavily bedded chert deposits were worked in Ohio, Arkansas, Kentucky, Georgia, and Missouri; nodular cherts in Indiana, Illinois, Kentucky, and Tennessee; and hematite ore for implements and ochre for paint in Missouri. The ice sheets of the glacial period brought down vast bodies of detritus from the far north, filled with fragments and rounded masses of granitic and other durable rocks which were utilized by the inhabitants of the region. Copper from the Lake Superior mines had taken an important place in the arts and much skill was shown in its manipulation by maleating processes. The tribes of the middle region, the greatest of the mound builders, mined mica in western North Carolina, and the evidences of their operations are of astonishing magnitude.

As a result of the mineral riches of the area, the range of lithic artifacts is greater than in any other region north of the valley of Mexico. By the fracture processes vast numbers of cutting, scraping, boring, piercing, digging, and hammering implements were manufactured. The sword-like blades of Tennessee approach the highest place among American chipped products, and the agricultural implements of the Illinois region constitute a unique and remarkable class without parallel in any country.

The large class of implements and other articles shaped by pecking and grinding processes, often as secondary to chipping, is of great archeological interest. The grooved axes, celts, adzes, and chisels are of superior make, and the discoidal chunkey stones,

tobacco pipes, bannerstones, and other objects of faith and ornament are remarkable for their perfection of form and high degree of finish.

Among the specially noteworthy features of the area are the caches or hoards of stone implements employed as mortuary offerings. Perhaps the most remarkable of these hoards is a deposit of many hundreds of obsidian implements found in an Ohio mound; the beautifully made implements are of unique shapes and were not designed for use, but as offerings merely. They had been transported from unknown sources in the Rocky mountains a thousand miles away, or from California or Mexico. A single deposit in a mound at Hopewell, Ohio, contained upward of 8000 well-made disks of flint of large size. There are also the hematite objects of the central districts; the pigment palettes of Alabama; the engraved shells, and the sculptured utensils and idols of the middle districts; the skilfully executed implements and ornaments of copper; and the remarkable and very puzzling repoussé figures in sheet copper obtained from mounds in Georgia and Illinois. Among the most noteworthy examples of the handiwork of the mound-building peoples are certain relics obtained by Putnam from the Turner group of mounds in Ohio.

Some of the tribes were excellent potters, and the elaborately painted vases and effigy vessels of the middle Mississippi region and the scroll decorated vessels of the lower Mississippi and Gulf coast evince excellent taste and great skill, falling short, however, of the achievements of the ancient tribes of the arid region in some important respects. The stamp decorated ware of the south Appalachian region is of much interest.

It is observed that the culture of this area in certain of its typical phases extends down to the Atlantic in Georgia, blending with that of the Florida area and to the Gulf in Alabama, Mississippi, Louisiana, and Texas. It has much in common with the culture of the upper Mississippi and Great Lakes region, and grades somewhat abruptly into the culture of neighboring areas on the east and west. Although presenting a certain degree of homogeneity throughout, this area is by no means a simple culture unit.

There are a dozen or more somewhat localized centers of development and differentiation, no one of which could in the present state of our knowledge be safely selected as a type for the entire area. Aside from the more typical forms of culture there are limited areas in which very primitive conditions seem to have prevailed down to the coming of the whites. There are some indications of culture relations with Mexico; among these are similarities in the arts as in certain sculptured figures and engraved designs on shell ornaments and pottery, but as a whole the cultures stand well apart.

This area has been the field of extensive though somewhat scattered research. Some of the more important explorations are those of Tomlinson, Squier and Davis, Force, Putnam, Moorehead, Mills, Fowke, Thomas and his assistants, Phillips, Thruston, Moore, Jones, Peet, Whittlesey, MacLean, Holmes, and Metz.

THE UPPER MISSISSIPPI AND GREAT LAKES AREA

The upper Mississippi and Great Lakes region is not very sharply differentiated from the neighboring areas either in its aboriginal inhabitants or its culture, ancient or modern. The historical tribes are of the Algonquian and Siouan stocks, and important communities of the former are still found within the area. The ancient culture is about on a par with that on the east and in some respects is inferior to that on the south. Hunting, fishing, and seed gathering were the leading avocations of the people, but agriculture was practised in favorable localities and the so-called garden beds of Michigan are among the most novel features of our northern archeology. Burial mounds of ordinary forms are widely distributed and monumental features of unique type abound. The latter include groups and chains of earthworks in formal and puzzling arrangements, and numerous animal-shaped mounds, confined largely to Wisconsin, and supposed to have had some important sacerdotal function.

The area has within its borders two features of exceptional interest: the ancient copper mines of the Lake Superior region and the catlinite or red pipestone quarries of southwestern Minnesota. The sites of the copper mines are marked by extensive pittings

made in exposing the copper-bearing rocks and breaking them up to release the masses of native copper. This work was accomplished mainly with heavy bowlder hammers obtained from the lake shores and by the aid of fire. Thousands of these hammers are found in and about the old pits, occasional specimens being grooved for hafting. The copper was worked up into implements, ornaments, and objects of faith of great variety which are found, especially associated with burials, throughout the United States. The implements employed in quarrying the pipestone were tough fragments of quartzite rock, roughly shaped for the purpose. The old excavations extend along the narrow outcrop for nearly a mile across the smooth surface of the prairie. The articles made from the catlinite were tobacco pipes, ceremonial objects, and ornaments, and these were distributed and used as was the copper over a large part of the area now known as eastern United States.

The stone utensils of the area comprise rude mortars and pestles, the latter of the cylindrical type, and the pecked and ground implements include grooved axes, celts, adz blades—rarely of gouge shape—tobacco pipes, tubes, and the usual range of ceremonial and talismanic objects. The fluted ax and the faceted celt are peculiar to the area. Deposits of flint were worked in many places and chipped implements of usual types are exceedingly plentiful.

Quartz veins were worked at an early period about the Little Falls of the Mississippi, and crudely chipped artifacts are found in flood-plain deposits of the vicinity which are regarded by some geologists as having been laid down during the closing stages of the glacial period.

The pottery of the area is of distinctive types and generally more primitive in make than the ware of the south. In some sections the pots are carefully finished and decorated with incised and indented figures, but painted specimens are rare.

A most noteworthy feature of the region is the manufacture in recent years of many false antiquities of peculiar type, purporting to represent early occupancy of the country by Old World peoples.

Explorations have been conducted within the area by Catlin, Latham, Winchell, Brower, Brown, Hamilton, Phillips, Smith, Holmes, and many others.

THE GREAT PLAINS AND ROCKY MOUNTAIN AREA

Traces of the typical culture of the agricultural mound-building peoples of the Mississippi valley fade out gradually as we traverse the great plains which extend westward to the Rocky mountains. The region generally is not well suited to primitive agriculture, and, abounding in game, it encouraged a nomadic rather than a sedentary life, although several stocks—Siouan, Algonquian, Caddoan, Athapascan, Shoshonean, Kiowan, and others—claimed and permanently occupied somewhat definite areas. Agriculture was practised in a limited way in some of the more easterly valleys. There were no buildings that could be called permanent, although many hut rings, house depressions, and small mounds, the last being the remains of earth lodges, occur on the old village sites, and burial mounds are not of infrequent occurrence in some of the principal valleys. The dwellings of the less sedentary tribes were made of the dressed skins of animals, especially the buffalo, which overran the region in vast herds.

Quarries of flint with associated sites of manufacture are found in Oklahoma, Kansas, and Texas, and of quartzite and soapstone in Wyoming. Obsidian is plentiful in the Yellowstone park and in the upper valleys of the Snake river, and was much used locally. The obsidian implements found occasionally in the eastern states may have come from this region. The population was sparse, the activities restricted, and as a consequence the varieties of well specialized artifacts were limited in number. The more essential stone implements of the hunter tribes, the projectile points, knives, scrapers, hammers, and club-heads, are very generally distributed, while other forms are comparatively rare. An implement of much importance to the hunter tribes was the heavy grooved hammer so useful in killing and breaking the bones of large game, in driving stakes, and in pounding seeds and pemmican. It is probably the most typical and characteristic of the stone implements of the plains and mountains of the middle region. A powerful weapon was a hafted hammer, probably of somewhat recent introduction, called *pogamoggan* by some of the tribes. These two hammers were the principal articles of the pecked-ground variety of the

region, although implements of other classes and even objects devoted to sacred and ceremonial use occur here and there in the valleys. Similar lithic conditions prevail in the mountains and valleys north of the arid region, west to the Sierra Nevada and indefinitely toward the north. There are some traces of the spread of the characteristic implements of the arid region, especially the metate and muller, toward the north beyond Salt Lake and to the east over the great plains even as far as the Ozarks, and there is a noticeable overflow of the types of artifacts characterizing the middle Pacific slope into the upper valley of the Missouri. Among these latter objects are straight, tubular stone tobacco pipes and paddle-shaped stone clubs. These intrusions are probably due to the Shahaptian stock, whose habitat extended from Oregon and Washington well over into the valley of the Missouri. Two remarkable discoveries within the region are a deposit of nearly a thousand flint implements obtained from a sulphur spring at Afton, Oklahoma, and a cache of thousands of arrowheads in Delaware county, Oklahoma. Large areas along the eastern border of the plains that were formerly occupied by sedentary, mound-building peoples, had become, through the invasion of the buffalo, the hunting grounds of the so-called wild tribes. Pottery, the safest index of the stable status of a people, is somewhat rare in the area save in the more easterly valleys, and where found it is of the simplest culinary type.

Collections from this great area are comparatively limited, and large tracts of the territory have received almost no attention on the part of archeologists.

Claims to great antiquity in this grand division are based on reported finds of stone implements associated with fossil mammal remains in the loess formations, on a small figurine of baked clay known as the Nampa image found in Idaho, and on an obsidian blade from Nevada. It is a most remarkable fact that the image which is assigned tentatively to the Tertiary or early Quaternary, is probably the most mature example of modeled human figurine yet found west of the Missouri.

Naturally the antiquities on the southwest border affiliate in

numerous features with the art of the Pueblo region and in the Far West with the remains of the California and Columbia-Fraser areas, but the general state of culture has been everywhere about the same and closely akin to that of the historic and the present time in the same area.

The principal scientific explorations of the region are those of Dorsey, Smith, Holmes, Norris, Brower, Winchell, Montgomery, Leidy, McGee.

THE ARID REGION

This area includes New Mexico and Arizona, and portions of Utah, Colorado, Nevada, and Texas. It is in the main a region of plateaus, canyons, and cliffs; of limited fertile areas bordering stream courses, and broad stretches of arid semi-desert. Contrasting thus strongly with neighboring areas, it has induced a culture peculiarly its own. The cliffs abound in caves and deep recesses well adapted for habitation, and the improvement of these for dwelling probably led to the intelligent use of stone in building, with the result that the building arts were more highly developed than in any other section north of middle Mexico.

That the region has been occupied for a long period is amply attested by the occurrence of great numbers of ruins of substantial structures, cliff-dwellings, and plateau and lowland pueblos scattered broadcast over the territory. Reservoirs and extensive traces of irrigating canals attest the enterprise of the people. That the present town-building tribes are the descendants of the ancient peoples is indicated by tradition, by skeletal evidence, and by material culture. The past connects with the present without perceptible break, and the implements and utensils of today are, save for the intrusive elements of white civilization, the implements and utensils of the past. The town-building peoples belong to a number of linguistic stocks,—Shoshonean, Zuñian, Tanoan, Keresan, Piman, and Yuman,—and aside from these a number of non-townbuilding tribes occupy the region,—the Ute, Paiute, Navaho, and Apache,—the range of whose lithic arts is quite limited, agreeing somewhat closely with that of the hunter tribes of the plains and mountains.

Four types of dwellings are noted: concrete, as in the Casa Grande ruins in Arizona; adobe bricks, as in parts of New Mexico and Arizona; masonry, throughout the region; and excavated, as in Colorado, New Mexico, and Arizona. The cliff-dwellings are of great interest and are single houses, small groups, and, in cases, villages capable of accommodating hundreds of people. Generally they occupy picturesque and almost inaccessible niches in the canyon walls. The plateau and cliff sites were often selected with a view to defense, and the lowland pueblos were practically fortifications. The outer walls were unbroken save by a single doorway, while entrance to the dwellings generally was from the inner court by way of the roofs of the first story. In many places steep ascents and narrow passes were defended by low walls of rude masonry, and it is assumed that the round and square towers found in some sections were designed for observation and defense.

Aside from the buildings and excavated dwellings, other features of the lithic art of the region, although distinctive, are in no case markedly superior to corresponding features of neighboring areas. Nearly all implement types are in present use or have been in recent use by the tribes, and the practice of gathering and using stone implements from the ancient sites has been so general that the old and the new are not separable, and references of implements or other relics of art to particular tribes, ruin groups, or districts must be made with caution. The mealing stones, especially the metate and the muller, though plain slabs or shallow troughs, are well made, and the numerous small mortars and pigment plates are sometimes carved to represent serpents, birds, and other animal forms. The carving of animal fetishes is a noteworthy feature, particularly of the modern art, but the work is not of a high order of merit. Attempts at representing the human form are exceedingly crude. The most ambitious sculptural effort of the region is exemplified in the figures of two crouching mountain lions worked out life-size in the rock in place near Cochiti in the Rio Grande valley, but these figures have been so mutilated that it is difficult to determine their original merit as works of sculpture.

Receptacles of stone, aside from the mealing stones and mortars,

are rare, their place having been taken by products of the potter's art, which are abundant and of superior quality, and remarkable for varied and tasteful decoration. The potter's art had reached a degree of perfection not greatly surpassed elsewhere in America, certain groups of the ware displaying grace of form and beauty of decoration advanced apparently far beyond the attainments of the people in other directions.

The minor stone implements of the area correspond in grade somewhat closely with those of the middle and eastern states and the Pacific slope, but the gouge, celt, chisel, and perhaps other forms are absent; while a few are peculiar to the area, as the spatulate celt and the sandal last. The grooved ax takes the most prominent place, and in form, finish, and effectiveness as a stone-age cutting tool is rarely surpassed. Numerous axes of exceptional interest are quite distinct in type from the ordinary ax and are made of fibrolite, a handsome mineral of great toughness and hardness which is rarely found elsewhere. Implements for straightening and smoothing arrow-shafts are quite numerous and exceptionally varied in shape. A group of spatulate implements of jasper, resembling somewhat closely the celt of the East, is of special interest. Although it is referred to by the natives as an agricultural implement, its modern use, according to Fewkes, is entirely ceremonial. In one instance this explorer found twelve of these implements among the sacred paraphernalia of a Hopi altar. The present writer found one embedded in a bin of charred corn in a cliff-house on the Rio Mancos. Hammerstones of all ordinary varieties are present in large numbers, and abrading stones and polishing implements are of common types. Chipped implements—arrowpoints, spearheads, knives, scrapers, and drill-points—are of usual types and are not very abundant or especially noteworthy. The materials used include obsidian, jasper, and many varieties of chalcedony. Great skill was evinced in the manufacture of beads and other small trinkets, the boring being done with the pump drill. Bone was much used for awls, and shell for ornaments. The bow and arrow was the principal weapon, while the atlatl, or throw-stick, was in pretty general use.

Mines of turquoise were worked extensively in New Mexico, Nevada, and Arizona. This semi-precious stone was used for ornaments and especially for inlay or mosaic work, some very attractive specimens of the latter having been collected, and it was distributed by trade to distant parts, even to Mexico. There are few traces of the working of metals, the silversmith's art of recent times having been introduced by the Spanish, and the copper bells occasionally found are probably of Mexican origin. The weaving arts and basketry were practised with much skill.

In three important branches of material culture—the ceramic, the textile, and the stone-building arts—this area stands far above any other north of middle Mexico. Little evidence of great antiquity beyond that furnished by the complex cultural conditions and innumerable deserted dwelling places and acequias has been found.

Among those who have contributed observations of scientific value regarding the antiquities are: Blake, Cope, Powell, Cushing, Fewkes, Bandelier, Matthews, Hewett, Russell, Hodge, Holmes, Hough, Jackson, the Mindeleffs, Nordenskiöld, Stephen, Pepper, the Stevensons, Wheeler, Whipple, Simpson, Morgan, Dorsey, Bartlett, Voth, Bourke, Prudden, Kidder, N. C. Nelson.

THE CALIFORNIA AREA

Notwithstanding the diversified physical characters of the state and the extraordinary assemblage of linguistic groups within its limits, the culture of California was and is uniformly primitive. At the same time it is set off with remarkable distinctness from the equally primitive cultures of other areas, especially those of the Atlantic side of the continent. In the desert and semi-desert regions of the extreme south and in northwestern Mexico, occupied mainly by the Yuman stock, an exceptionally primitive state of culture prevailed, as graphically depicted by Father Baegert in his report dated 1772, and by McGee in the *17th Annual Report of the Bureau of American Ethnology*. It is observed that the Santa Barbara region, including the islands off the coast, was in early times the center of a somewhat exceptional

development in certain branches of handicraft and especially in the working of stone, while more primitive but kindred conditions prevailed to the north and east throughout California.

The lithic antiquities of the Santa Barbara district, which are attributed in large part to the Chumashan group, are characterized by great numbers of well sculptured domestic utensils—bowl-shaped mortars, and long, graceful pestles of sandstone, globular cooking pots, rectangular and ovoid baking or boiling plates, tubular tobacco pipes of steatite, and polished bowls and cups of serpentine. The quarries from which the materials were obtained are situated partly on the mainland, but principally, it is believed, on the islands off the coast. The shell-heaps and village sites of the mainland and of the islands have been examined by Schumacher, Bowers, Nelson, and members of the War Department surveys, and the quarries of Santa Catalina island have been described by Schumacher and the present writer. Contrasting with the thin-walled bowl-like mortars of this district and the slender, graceful pestles associated with them, are the heavy, globular, conical and cylindrical mortars, the numerous mortars and clusters of mortars worked in outcropping rock masses with their heavy cylindric pestles, and the metate slabs with their flattish mullers which occur in great numbers in many sections.

Bone was much used for piercing implements and ornaments. The beautiful shells of the coast—especially the haliotis and large clam—were a favorite material for the manufacture of personal ornaments, and the dentalium and other of the smaller shells served as ornaments and as a medium of exchange.

In the middle and northern districts obsidian is plentiful, and chipped implements made of this material are found in great numbers. The large knives, some of which measure two feet or more in length, are marvels of the flaking art, and are second in this respect in North America only to the slender flint blades of Tennessee. There are also superb flint blades in some localities, and arrow-points and spearheads of exceptional beauty are found, their manufacture having continued in some sections down to the present day. Other features deserving special mention are the perforated digging

weights made of numerous varieties of stone, the hook-shaped carvings and the killer whale images of soapstone of the Santa Barbara region, and the plummet stones of middle California. Among the unique objects are specimens of boat-shaped and banner stones (imperforate) of eastern type also found in middle California. It is a remarkable fact that the grooved ax, the celt, and the gouge, implements of so much importance in eastern areas, do not occur, or are found but rarely, on the Pacific slope; the small adz blades take, in a measure, the place of these tools.

The dwellings were of grass, brush, bark, and earth, and in the north were to a limited extent of slabs of wood. The floors were sometimes excavated to slight depths, and the more primitive structures were often covered with earth. Absence of stone building in the area and the practical absence of pottery are in striking contrast with the well matured state of these arts in the arid region on the east, shortcomings which, notwithstanding the well-made utensils of stone and the exquisite basketry and shell and bone work of California, place the Pueblo culture on a considerably higher plane than that even of the most advanced group of the Pacific states. The practice of agriculture gave the Pueblo people a decided advantage over the non-agricultural peoples of the coast, whose chief food resource, aside from the products of the chase, consisted of acorns, seeds, and berries.

The handiwork of the tribes of the coast merges with that of the inland valleys and ranges, and this blends in turn with the culture of the Sierra, and the basin range region to the east. The transition between the culture of southern California and that of the Pueblo region is decidedly abrupt, although the somewhat recent coastwise extension of the Shoshonean stock from the east has resulted in limited blending. The transition to the north is gradual, the disappearance of the oak being responsible for marked changes in the activities and manner of life of the people.

A most extraordinary feature of California archeology is the occurrence of articles of stone—mortars, pestles, and other objects of kindred culture grade, as well as fossil human remains—in the gold-bearing gravels of the mountain valleys, numerous specimens

having been reported as coming from beneath beds of lava of early Quaternary or late Tertiary age. That the relics are old in cases can not be doubted, but their exact chronological place and value have not as yet been ascertained.

The most noteworthy features of Californian culture are entirely its own and are manifestly due in great measure to the molding influences of the environment. The acorn is probably responsible for the wonderful development of the mortar and pestle, and deposits of soapstone have made possible the unique cooking pots and other noteworthy features of the native handicraft. The art of basketry was remarkably developed and retains its superiority to the present day. Watertight baskets and utensils of stone took the place of earthenware.

It is interesting to note that, beginning in middle California, the status of culture as represented by art works rises gradually as we pass to the north through Oregon, Washington, and British Columbia, the culmination being reached with the tribes of the Northwest coast. In the south attempts to model or carve the human figure are unknown, while animal figures are of rare occurrence. As we advance toward the north, sculptures, human and animal, increase in number, and in British Columbia there is an extraordinary development of the sculptor's art culminating in the remarkable grave posts, masks, and giant totem poles. That Middle America has had no influence on the culture of this coast is apparent.

Considering all phases of their culture, the achievements of the California tribes must be regarded as inferior to those of the Gulf states, the Mississippi valley, the Pueblo region, and the Northwest coast, and even of the Eskimo of Alaska.

Among those who have conducted archeological investigations in California are: Whitney, Schumacher, Yarrow, Henshaw, Powers, Bowers, Holmes, Sinclair, Meredith, Terry, Yates, Palmer, Becker, Nelson, Rust, J. C. Merriam, and Skertchley.

THE COLUMBIA-FRASER AREA

The interesting region beginning in northern California and extending north to include the Columbia and Fraser valleys, pre-

sents diversified yet in a large way uniform culture phenomena. Owing to the somewhat marked differences between the coastal environment which is moist, and rich in forests, and the interior which assumes generally a semi-arid aspect, the material culture, ancient and modern, presents numerous minor differences. Naturally the inland culture graduates into that of the plateau and mountain region on the east. It is not separated very definitely from California on the south, but presents strong contrasts with the culture of the Northwest coast.

The inhabitants of recent times comprise numerous stocks and tribes of primitive culture whose chief dependence was and is hunting and fishing and the natural supply of seeds, nuts, fruits, and roots. In the south the acorn was a principal article of diet. Their better houses were of wood and earth, and have left few traces save the shallow floor excavations with accompanying heaps and ridges of earth, and in the arid interior the earth-rings which mark lodge sites. Along the shores are numerous shell-heaps, the industrial contents of which agree with those of the general region save in so far as differences have resulted from differences in environment. Eells mentions burial mounds in the Willamette valley which yielded a wide range of the ordinary local relics, besides, in cases, glass beads and articles of iron. Chase examined certain mounds on the coast in southwestern Oregon with similar results. Earthworks and simple fortifications are mentioned by both explorers. Numerous cemeteries have yielded many relics of art of all classes. Rock carvings are generally distributed over the area.

The relics of stone seem to tell a consistent story of ethnic conditions varying but little from that of historic times. Certain forms of implements and objects of sculpture characteristic of California extend to the north throughout the entire length of the area, while other forms characteristic of the Northwest coast extend far to the south. Deep globular forms of mortars prevail in some sections, and metates are found in others. The pestles in certain regions are of the oblong-club shape, often well finished and even tastefully carved, while in others they are ovoid or flattish, often merely adapted bowlders. All were used as hammers on occasion.

Tobacco pipes, straight in the south and bent tubes and other forms in the north, are mentioned. The grooved ax and celt are absent, the adz blade taking the place of these forms here as elsewhere on the Pacific slope. Dishes, slate knives, sinkers, wedges of antler, abrading stones, scrapers, drills, arrow-shaft rubbers, and clubs (the latter of bone and stone), and projectile points and knives are found in numbers.

Among objects of exceptional types may be mentioned large obsidian ceremonial blades in the south, batons of stone or bone carved to suggest or represent animal shapes, weight-like stones with loop for suspension, and some curious carved heads which have been regarded by some as intended to represent apes. The latter, although not carvings of particular note, find no counterpart in any portion of North America.

Detailed study of this region would, perhaps, as in other cases, require its separation into two or more minor environments, but the blendings of the material culture are so intricate that conclusions of value can not be reached until further field investigations are made.

There appears no certain evidence of the presence in early times of peoples distinct in character and culture from those of the present. The valley of the Columbia is given an important place in the ethnic history of the continent by Morgan who imagined it was a kind of hot-house, the multiplying peoples of which spread out over the south and east; but slight evidence has been found to support this hypothesis. Certain finds of supposed geologically ancient human remains and culture traces have been reported, but none of these have so far been fully authenticated. If, however, geologically ancient man did occupy the continent, the valley of the Columbia ought to be a very promising field for the preservation and discovery of the record.

Explorers of the region include Schumacher, Eells, Smith, Boas, Terry, Dawson, Morice, and Chase.

THE NORTHWEST COAST AREA

This area comprises a rather narrow strip of the mainland and the contiguous coastwise islands in British Columbia and Alaska,

and extends from Puget sound on the south to Mt Saint Elias on the north, a distance of twelve or thirteen hundred miles. The present tribes belong to half a dozen stocks, well differentiated in physical characteristics from the Eskimo, with whom they come in contact on the north, and differing somewhat decidedly from the Indian tribes on the east and south. The material culture embodies many noteworthy and exceptional features and, as a whole, stands well apart from all other areas of the continent. It affiliates in some respects with that of the coast culture on the south and with the inland culture on the east. Hunting and especially fishing are and have always been the chief food resources of the people, agriculture being unknown. The area abounds in splendid forests, and the people have developed exceptional skill in carving wood, originally with stone tools, and later in greater elaboration with implements of iron and steel. The dugout canoes are often of great size, beauty, and seaworthiness, and are probably the world's highest achievement in this direction. Not less worthy of mention are the substantial houses of hewn timbers, and the totem poles, house posts, grave posts, human and animal effigies, and various utensils, masks, and other objects carved with a skill and boldness that would do credit to any people. Although it must be allowed that these results are due in a measure to the acquirement of white men's tools, it can not be denied that the people are endowed with a genius for sculpture without parallel among the tribes of northern America. Their skill in carving extended to stone, shell, bone, and horn, and to a wide range of minor articles of use, ornament, faith, and ceremony. The artifacts of stone include hammers and mauls of the highest known types, adzes, mortars, pestles, knives, batons, tobacco pipes, amulets, ornaments, and other objects, but examples of chipped stone are of rare occurrence. Pottery is unknown, vessels of wood, bone, and horn serving in its place. Slate obtained from deposits on the Queen Charlotte islands has been much used in recent times for carving, and remarkable results are seen in miniature totem poles, boxes, dishes, pipes, and in diversified animal, human, and fanciful forms. Jade, found in the Frazer valley and probably elsewhere, was skilfully cut by primitive

abrading processes and shaped into tasteful implements and ornaments. Much taste is shown in the inlaying of ornaments of bone and stone with the brilliant nacre of shells. Petroglyphs are numerous in some sections and probably date back to very early times, although they display the peculiar characteristics of the graphic art of the living tribes as embodied in painting, engraving, and weaving. Copper was and still is worked with considerable skill, and although the native metal occurs within the area, it is not known to what extent it was mined and utilized before the coming of the whites. Certain features of the arts—practical, religious, and ornamental—are thought to suggest inspiration from the Pacific islands, but if this is shown to be the case we shall still be unable to say whether that influence may not have been exerted exclusively during the rather long period since modern sea-going vessels began to ply back and forth on the Pacific. Traces of advanced Asiatic art are occasionally encountered along the coast, but these may be attributed to the stranding of vessels carried across the Pacific by the Japan current rather than to purposeful voyages in prehistoric times.

The peculiar geography of the country has doubtless served in conjunction with its exceptional vegetal and animal resources to develop the unusual ability and enterprise of the people. Indeed, if a greatly diversified coast line tends, as some have held, to accelerate the culture progress of peoples, the inhabitants of this region should rank high among American nations.

The archeologist can lay little exclusive claim to the antiquities of the region, since nearly all the known forms of native artifacts appear to have been in use since the coming of the whites, and these have given way only gradually to the encroachments of iron and steel. Scientific researches within the area have hardly touched the problems of antiquity, and no evidence serving to carry the history of man into the remote past has been obtained. The culture, so far as observed, appears to be decidedly homogeneous and with slight trace of antecedent forms of art either lower or higher than the historic. It is believed by some authorities that certain elements of the population entered the area from the high-

land valleys on the east. Although this region lies along the most likely trail of peoples entering America by way of Bering strait, nothing has been observed in the culture of the people suggesting migrations from the north, and no characteristic features that might not have arisen within the local environment or from possible intrusions within a few hundred years.

Original investigators of this area who have contributed information regarding the native culture and antiquities are Swan, Niblack, Boas, Emmons, Smith, Swanton, and others.

THE ARCTIC SHORELAND AREA

The arctic characterization area extends from Greenland on the east to farthest Alaska on the west, and from the tortuous northern shores of the continent somewhat indefinitely into the interior. Along the Atlantic and Pacific coasts the peculiar arctic culture shades off into the cultures of the south. Where not subject to the direct influence of other races, it is essentially Eskimoan in its prehistoric as well as in its historic phases, and the uniformity of the frigid environment and of the racial elements involved has resulted in marked uniformity of achievement throughout the area. Indeed, so all-impelling are boreal conditions that it would seem strange, since Bering strait does not interfere with free intercourse between the east and the west, did this uniformity not extend practically the entire length of the Arctic circle. The culture of the past merges into that of the present and archeological researches may be expected in time to contribute much of interest to the culture history of the area, at least of the more recent past. There is no doubt that marked changes have taken place in the arts and manner of life of such of the peoples as have come in close contact with the whites, but we may feel assured that their ingenuity and their exceptional dexterity in many directions are indigenous traits, developed largely as a result of long struggles with the exacting environment.

In these inhospitable regions shelter during the inclement seasons is an ever-existing necessity, but home-building had its severe limitations. Houses were built of driftwood, whale bones, stone,

earth, sod, and snow, and the sunken floors aided in making existence during the long winters bearable. Explorers find traces of these long-deserted structures and of storehouses and cairns scattered along thousands of miles of the frozen coast.

Fire for warmth and for cooking is a first consideration to dwellers in the arctic, and since oils and fats were the main dependence for fuel, the lamp filled an important place in every household. This useful utensil was made usually of soapstone. It is a remarkable fact that the lamp is unknown in any other part of America, while several forms are found in arctic Asia.

Hunting and fishing are and were always necessarily the almost exclusive means of subsistence of the people, and weapons and other devices for capturing game are among the most ingenious of their kind. In the west tough jades, the rare pectolites, and other hard varieties of stone were employed in making mortars, pestles, dishes, vessels for containing, hammers, adzes, chisels, picks, knives, whetstones, sinkers, tobacco pipes, and other implements and utensils. Hard, brittle stones, such as flint and slate, were wrought and skilfully shaped by fracture processes into knives, scrapers, drills, and projectile points, and the art is by no means a lost one at the present day. It is a noteworthy fact that, although great skill was shown in the shaping of stone by these processes, spear and harpoon heads, knives, and especially the woman's knife, were very often shaped and sharpened by grinding. Familiarity with this process in the shaping of bone and ivory would necessarily suggest its use in working stone. The grooved ax, celt, and gouge are absent from the area.

Stone was used also in the manufacture of personal ornaments, such as labrets, beads, ear-plugs, and pendants, some of these being unsurpassed for beauty of material and finish. Figurines, toys, fetishes, charms, talismans, and a multitude of other articles were also carved with great skill and in all available materials, and engraving of pictorial subjects of considerable merit is a distinctive feature of the more recent arctic art.

It is a remarkable fact that pottery was formerly in common use in the far north, especially along the coast as far east as Franklin

bay. The vessels, rather thick-walled, and generally of medium or large size, were probably intended for cooking and containing food, but are of good shape and tastefully ornamented with incised and impressed decorations. The pottery-making period is not yet determined, but the art appears not to have been practised in recent times, save in the manufacture of lamps.

As with many of the ethnic areas of America, the material culture of the present and past blend completely. The task of determining by a study of the antiquities the changes that have been wrought falls to archeology. The shell-heaps of the Aleutian islands have yielded data of interest regarding the problems of chronology, carrying the story back perhaps thousands of years. The Bering region is believed to be pregnant with historic interest—geological, geographical, climatic, and anthropological—to hold within its soil and more recent formations solutions of many of the problems of the American race—but the inquirer must wait.

A comparison of the culture of the Eskimo race with that of the other ethnic groups of the continent must result in giving this people an enviable place in the scale of intellectual achievements, but the environment has placed rigid limitations on the possibilities of accomplishment. However, the list of minor artifacts would probably be as long as that of any other northern American area, and many of the things are without corresponding features elsewhere.

Among the explorers who have contributed original information regarding Eskimo culture may be mentioned Dall, Murdoch, Nelson, Turner, Boas, Solberg, Rink, Mackenzie, Holm, Frobisher, Simpson, Krantz, Kane, Hoffman, Grenfell, and Stefánsson.

THE GREAT NORTHERN INTERIOR AREA

Archeologically the great interior region of British America is practically a negligible quantity. It may contain traces of early occupancy of deep interest to the historian of the race, but research has as yet made slight progress within its borders. It is assumed as probable that successive instalments of migrating peoples entered the gateway at the northwest and moved southward and eastward over the region, some remaining, unaware of better things,

others passing on to more genial climes. None appear, however, to have made a perceptible impression upon the face of the northern wilderness. Over a large part of the area, at least, all traces of very early occupancy, if such there ever were, must have been wiped out by the ice sheets which, one after another, swept southward over the country, the latest invasion in the central region continuing down to the period which witnessed the building of the Egyptian pyramids. Limited areas in the west and northwest were not thus invaded, but these have, as yet, yielded nothing of particular value to archeology. The extensive operations of the gold miners of the Yukon have, during twenty years of unprecedented activity, brought to light no trace of man or his works.

That the primitive Athapascan and Algonquian stocks—the caribou hunting peoples—have long occupied the region and have left the simple products of their handicraft on countless abandoned sites is safely to be inferred, but it is probable that past cultures did not in any instance rise above the level of the present. The researches of Mackenzie, Hearne, Morice, and others indicate the poverty of the historical tribes in manifestations of material culture, and the archeologist may expect to find little beyond artifacts of the simplest type—projectile points, knives, scrapers, abrading stones, hammerstones, boiling stones, and minor relics of other materials—merely such things as are necessary to the existence of hunter tribes. Traces of intrusive culture may be expected along the western and southern borders. The unfolding of the story of the past in this area must prove a tedious and almost thankless task. At any rate, it is apparent that in the present state of our researches this region will seldom be referred to in the discussion of the antiquities and culture history of the continent.

Explorers of this area who have made contributions to the history of early times include Mackenzie, Hearne, Morice, Hill-Tout, Dawson, and others.

Bureau of American Ethnology
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MATERIAL CULTURES OF THE NORTH AMERICAN INDIANS

By CLARK WISSLER

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FOR some years the study of material culture has been quite out of fashion, though not so very long ago it was otherwise. Field-workers still record such random data as come to hand and gather up museum specimens, but give their serious and systematic attention to language, art, ceremonies, and social organization. As a result we have accumulated certain stimulating and serviceable conceptions which serve as a basis for the further development of these problems. On the other hand, there is little of this character to record for material culture, so that if we give our attention strictly to a review of progress, the task will be light. In consequence, we have chosen to review briefly the data for North American material culture and then present some of the most obvious general problems that are suggested.

The description of a tribe's material culture, to be regarded as adequate, should give reasonably full data on the points enumer-

ated in our topical list. Such a list might well serve as a guide to field-work and also as an outline for the published reports. In the preparation of this outline we have been guided entirely by practical considerations rather than by logical relations. Thus the order of topics and their divisions have no scientific significance, but are such as justify themselves to us as the most convenient.

The thorough treatment of our subject would require taking up in succession the three hundred or more tribes known to us and reviewing their culture in detail. Unfortunately, we have very meager data on many points, but on the whole this outline can be more completely filled in for all these tribes than similar ones for their social and ceremonial cultures. For some tribes we have special papers treating most phases of their material cultures, but the bulk of our information is scattered here and there among books of travel and exploration. Most of these data are still awaiting the ethnological student, yet we have now available in the readily accessible literature an *extensive* knowledge of the continent that is sufficient for a brief general discussion of our subject.

Topical List of Data Needed to Characterize the Material Culture of an American Tribe

1. Food: *a*, methods of gathering and producing vegetable foods; *b*, hunting; *c*, fishing; *d*, agriculture and domestication; *e*, methods of cooking; *f*, manufactured foods. (Details of methods and appliances in every case.)
2. Shelter: details of structure for (*a*) seasonal types; (*b*) permanent types, and (*c*) temporary shelters.
3. Transportation: methods and appliances for land and water.
4. Dress: materials and patterns; sex differences, *a*, headgear and hair dress; *b*, foot gear; *c*, hand gear; *d*, body costume; *e*, over-costume.
5. Pottery: methods of manufacture, forms, uses, colors, technique of decoration.
6. Basketry, mats, and bags: materials, kinds of weave, forms, uses, technique of color and decoration.
7. Weaving of twisted elements: materials, methods of twisting thread and cord, weaving frames or looms, technique of dyeing and pattern-weaving, kinds and uses of products.
8. Work in skins: *a*, dressing, methods and tools; *b*, tailoring and sewing; *c*, technique of bags and other objects; *d*, use of rawhide.
9. Weapons: bows, lances, clubs, knives, shields, armor, fortifications, etc.
10. Work in wood: *a*, methods of felling trees, making planks and all reducing processes; *b*, shaping, bending and joining; *c*, drilling, sawing, smoothing,

d, painting and polishing; *e*, use of fire; *f*, tools; *g*, list of objects made of wood; *h*, technique of carving.

11. Work in stone: processes, forms, and uses.
12. Work in bone, ivory, and shell.
13. Work in metals.
14. Feather-work, quill technique, bead technique, and all special products not enumerated above.

DISTRIBUTION OF MATERIAL TRAITS

One cannot take up problems in the distribution of material traits in America without acknowledging the extensive work of the late O. T. Mason. Though deeply interested in logical classification and genetic problems he rarely permitted these conceptions to obscure the geographical relations of traits. Thus no matter what points of view may ultimately prevail in anthropology, his works will stand at the head of the reference list.

Culture Areas

It is customary to divide the continent into culture areas the boundaries to which are provisional and transitional, but which taken in the large enable us to make convenient distinctions. North of Mexico we have nine culture areas: the Southwest, California, the Plateaus, the Plains, the Southeast, the Eastern Woodlands, the Mackenzie, the North Pacific Coast, and the Arctic areas. Each of these is conceived as the home of a distinct type of culture; but when we take a detailed view of the various tribal groups within such an area we find a complex condition not easily adjusted to a generalized type.

Plains Area. In the Plains area we have at least thirty-one tribal groups, of which eleven may be considered as manifesting the typical material culture of the area.—The Assiniboine, Arapaho, Blackfoot, Crow, Cheyenne, Comanche, Gros Ventre, Kiowa, Kiowa-Apache, Sarsi, and Teton-Dakota. The chief traits of this culture are the dependence upon the buffalo and the very limited use of roots and berries; absence of fishing; lack of agriculture; the tipi as a movable dwelling; transportation by land only with the dog and the travois (in historic times with the horse); want of

basketry and pottery; no true weaving; clothing of buffalo and deerskins; a special bead technique; high development of work in skins; special rawhide work (parfleche, cylindrical bag, etc.); use of a circular shield; weak development of work in wood, stone, and bone.

In historic times these tribes ranged from north to south in the heart of the area. On the eastern border were some fourteen tribes having most of the positive traits enumerated above and in addition some of the negative ones, as a limited use of pottery and basketry, some spinning and weaving of bags, rather extensive agriculture and alternating the tipi with larger and more permanent houses covered with grass, bark, or earth, some attempts at water transportation. These tribes are: the Arikara, Hidatsa, Iowa, Kansa, Mandan, Missouri, Omaha, Osage, Oto, Pawnee, Ponca, Santee-Dakota, Yankton-Dakota, and the Wichita.

On the western border were other tribes (the Wind River Shoshone, Uinta and Uncompahgre Ute) lacking pottery, but producing a rather high type of basketry, depending far less on the buffalo but more on deer and small game, making large use of wild grass seeds, or grain, alternating tipis with brush and mat-covered shelters.

Also on the northeastern border are the Plains-Ojibway and Plains-Cree who have many traits of the forest hunting tribes as well as most of those found in the Plains. Possibly a few of the little-known bands of Canadian Assiniboine should be included in this group in distinction from the Assiniboine proper.

These variations from the type are, as we shall see, typical traits of the adjoining areas, the possible exception being the earth-lodges of the Mandan, Pawnee, etc. On the other hand, the tribes of the area as a whole have in common practically all the traits of the typical group.[1] For example, the Mandan made some use of tipis, hunted buffalo, used the travois, worked in skins and raw-

[1] The reader should bear in mind that all the interpretations and assumptions in this paper are limited absolutely to the bounds of material culture and that no consideration is given to the applicability of the several conclusions to other aspects of culture. Hence, the word *culture*, unless otherwise stated, is to be taken as excluding all traits not enumerated in the topical list.

hide, and armed and clothed themselves like the typical Plains tribes, but also added other traits, pottery, basketry, agriculture, and earth-lodges. Thus we see that while in this area there are marked culture differences, the traits constituting these differences tend to be typical of other areas and that, hence, we are quite justified in taking the cultures of the central group as the type for the area as a whole.[1]

Plateau Area. The Plateau area joins the Plains on the west. It is far less uniform in its topography, the south being a veritable desert while the north is moist and fertile. To add to the difficulties in systematically characterizing this culture, arising from lack of geographical unity, is the want of definite information for many important tribes. Our readily available sources are Teit's Thompson, Shushwap, and Lillooet; Spinden's Nez Percé; and Lowie's Northern Shoshone; but there is also an excellent summary of the miscellaneous historical information by Lewis. In a general way, these three intense tribal studies give us the cultural nuclei of as many groups, the Interior Salish, the Shahaptian, and the Shoshone. Of these the Salish seem the typical group because both the Nez Percé and the Shoshone show marked Plains traits.[2] It is also the largest, having sixteen or more dialectic divisions and considerable territorial extent. Of these the Thompson, Shushwap, Okanagan (Colville, Nespelim, Sanpoil, Senijixtia), and Lillooet seem to be the most typical. The traits may be summarized as: extensive use of salmon, deer, roots (especially camas), and berries; the use of a handled digging-stick, cooking with hot stones in holes and baskets; the pulverization of dried salmon and roots for storage; winter houses, semi-subterranean, a circular pit with a conical roof and smoke hole entrance; summer houses, movable or transient, mat or rush-covered tents and the lean-to, double and single; the dog sometimes used as a pack animal; water transportation weakly developed, crude dug-outs and bark canoes being used; pottery not known; basketry highly developed, coil, rectangular shapes, imbricated technique; twine weaving in flexible bags and mats;

[1] Consult: Wissler, (*a*), (*b*), (*c*).

[2] Consult: Lewis; Teit, (*a*), (*b*), (*c*); Spinden; Boas, (*b*); Hill-Tout; Lowie.

some simple weaving of bark fiber for clothing; clothing for the entire body usually of deerskins; skin caps for the men, and in some cases basket caps for women; blankets of woven rabbitskin; the sinew-backed bow prevailed; clubs, lances, and knives, and rod and slat armor were used in war, also heavy leather shirts; fish spears, hooks, traps, and bag nets were used; dressing of deerskins highly developed but other skin work weak; upright stretching frames and straight long handled scrapers; while wood work was more advanced than among the Plains tribes it was insignificant as compared to the North Pacific Coast area; stone work was confined to the making of tools and points, battering and flaking, some jadeite tools; work in bone, metal, and feathers very weak.

The Shahaptian group includes tribes of the Waiilatpuan stock. The underground house seems to be wanting here, but the Nez Percé used a form of it for a young men's lodge. However the permanent house seems to be a form of the double lean-to of the north. In other respects the differences are almost wholly due to the intrusion of traits from the Plains. Skin work is more highly developed and no attempts at the weaving of cloth are made, but there is a high development of basketry and soft bags.

The Northern Shoshonean tribes were even farther removed toward Plains culture, though they used a dome-shaped brush shelter before the tipi became general; thus, they used canoes not at all, carried the Plains shield; deer being scarce in their country they made more use of the buffalo than the Nez Percé, depended more upon small game and especially made extensive use of wild grass seeds, though as everywhere in the area, roots and salmon formed an important food; in addition to the universal sagebrush bark weaving they made rabbitskin blankets; their basketry was coil and twine, but the shapes were round; they had some steatite jars and possibly pottery, but usually cooked in baskets; their clothing was quite Plains-like and work in rawhide was well developed; in historic times they were great horse Indians but seem not to have used the travois either for dogs or horses. The remaining Shoshone of western Utah and Nevada were in a more arid region and so out of both the salmon and the buffalo country, but

otherwise their fundamental culture was much the same, though far less modified by Plains traits. The Wind River division, the Uinta or Uncompahgre Ute, it should be noted, belong more to the Plains area than here, and have been so classed. In the extreme western part of Nevada we have the Washo, a small tribe and linguistic stock, who in common with some of the little-known Shoshonean Mono-Paviotso groups seem to have been influenced by California culture. Among other variants, their occasional use of insects as food may be noted. On the north of our area are the Athapascan Chilcotin whose material culture was quite like that of the Salish, and to the northeast the Kutenai with some individualities and some inclinations toward the Plains.

In general, it appears that in choice of foods, textile arts, quantity of clothing, forms of utensils, fishing appliances, methods of cooking and preparing foods, there was great uniformity throughout the entire area, while in houses, transportation, weapons, cut and style of clothing, the groups designated above presented some important differences. As in the Plains area we find certain border tribes strongly influenced by the cultures of the adjoining areas.

California Area. In California we have a marginal or coast area, which Kroeber divides into four sub-culture areas. However, by far the most extensive is the central group to which belongs the typical culture. Its main characteristics are: acorns, the chief vegetable food, supplemented by wild seeds, roots and berries scarcely used; acorns made into bread by a roundabout process; hunting mostly for small game and fishing where possible; houses of many forms, but all simple shelters of brush or tule, or more substantial conical lean-to structures of poles; the dog was not used for packing and there were no canoes, but used rafts of tule for ferrying; no pottery but high development of basketry, both coil and twine; bags and mats very scanty; cloth or other weaving of twisted elements not known; clothing was simple, and scanty, feet generally bare; the bow, the only weapon, sinew-backed usually; work in skins very weak; work in wood, bone, etc., weak; metals not at all; stone work not advanced. With the single exception of basketry we have here a series of simple traits which tend to great uniformity.

As with the preceding areas we must again consider intermediate groups. In the south the characteristic linguistic individuality vanishes to make room for large groups of Yuman and Shoshonean tribes; here we find some pottery, sandals, wooden war clubs, and even curved rabbit sticks, all intrusive. The extinct Santa Barbara were at least variants, living upon sea food, having some wood work, making plank canoes, and excellent workers of stone, bone, and shell. In northern California are again the Karok, Yurok, Wishosk, Shasta, and Hupa and other Athapascan tribes; here sea food on the coast and salmon in the interior rival acorns and other foods; dug-out canoes; rectangular gabled houses of planks with circular doors; basketry almost exclusively twined; elkhorn and wooden trinket boxes; elkhorn spoons; stone work superior to that of central California; the occasional use of rod, slat, and elkskin armor and also basket hats of the northern type. These all suggest the culture farther north.[1]

North Pacific Coast Area. Ranging northward from California to the Alaskan peninsula we have an ethnic coast belt, known as the North Pacific Coast area. This culture is rather complex and presents highly individualized tribal variations; but can be consistently treated under three subdivisions: (a) the northern group, Tlingit, Haida, and Tsimshian; (b) the central group, the Kwakiutl tribes and the Bellacoola; and (c) the southern group, the Coast Salish, the Nootka, the Chinook, Kalapooian, Waiilatpuan, Chimakuan, and some Athapascan tribes. The first of these seem to be the type and are characterized by: the great dependence upon sea food, some hunting upon the mainland, large use of berries; dried fish, clams, and berries are the staple food; cooking with hot stones in boxes and baskets; large rectangular gabled houses of upright cedar planks with carved posts and totem poles; travel chiefly by water in large sea-going dug-out canoes some of which had sails; no pottery nor stone vessels, except mortars; baskets in checker, those in twine reaching a high state of excellence among the Tlingit; coil basketry not made; mats of cedar bark and soft

[1] Consult: Kroeber, (*a*). Also the special anthropological publications of the University of California.

bags in abundance; the Chilkat, a Tlingit tribe, specialized in the weaving of a blanket of goat hair; there was no true loom, the warp hanging from a bar and weaving with the fingers, downward; clothing rather scanty, chiefly of skin, a wide basket hat (only one of the kind on the continent and apparently for rain protection); feet usually bare, but skin moccasins and leggings were occasionally made; for weapons the bow, club, and a peculiar dagger, no lances; slat, rod, and skin armor; wooden helmets, no shields; practically no chipped stone tools, but nephrite or green stone used; wood work highly developed, splitting and dressing of planks, peculiar bending for boxes, joining by securing with concealed stitches, high development of carving technique; work in copper may have been aboriginal, but, if so, very weakly developed.

The central group differs in a few minor points; use a hand stone hammer instead of a hafted one, practically no use of skin clothing but twisted and loosely woven bark or wool; no coil or twined basketry, all checker work.

Among the southern group appears a strong tendency to use stone arrowheads in contrast to the north; a peculiar flat club, vaguely similar to the New Zealand type, the occasional use of the Plains war club, greater use of edible roots (camas, etc.) and berries, some use of acorns as in California, the handled digging-stick, roasting in holes (especially camas) and the pounding of dried salmon, a temporary summer house of bark or rushes, twine basketry prevailed, the sewed rush mat, costume like the central group.[1]

Eskimo Area. The chief résumés of Eskimo culture have been made by Boas who divides them into nine or more groups, but his distinctions are based largely upon non-material traits. When we consider the fact that the Eskimo are confined to the coast line and stretch from the Aleutian islands to eastern Greenland, we should expect lack of contact in many parts of this long chain to give rise to many differences. While many differences do exist, the similarities are striking, equal if not superior in uniformity to those of any other culture area. However, our knowledge of these people

[1] Consult: Boas, (*c*), (*d*); Krause; Niblack; Emmons, (*a*), (*b*), (*c*).

is far from satisfactory, making even this brief survey quite provisional.

The mere fact that they live by the sea and chiefly upon sea food, will not of itself differentiate them from the tribes of the North Pacific coast; but the habit of camping in winter upon sea ice and living upon seal, and in the summer upon land animals will serve us. Among other traits the kayak and "woman's boat," the lamp, the harpoon, the float, woman's knife, bowdrill, snow goggles, the trussed-bow, and dog traction, are almost universal and taken in their entirety rather sharply differentiate Eskimo culture from the remainder of the continent. The type of winter shelter varies considerably, but the skin tent is quite universal in summer, and the snow house, as a more or less permanent winter house, prevails east of Point Barrow. Intrusive traits are also present: basketry of coil and twine is common in Alaska;[1] pottery also extended eastward to Cape Parry; the Asiatic pipe occurs in Alaska and the Indian pipe on the west side of Hudson bay; likewise some costumes beaded in general Indian style have been noted west of Hudson bay. All Eskimo are rather ingenious workers with tools, in this respect strikingly like the tribes of the North Pacific coast. In Alaska where wood is available the Eskimo carve masks, small boxes, and bowls with great cleverness.

These variants all tend to disappear between Point Barrow and Hudson bay and it may be noted that they are at the same time traits that occur in Asia, the North Pacific coast, or the Mackenzie area. Hence, we seem justified in looking toward the east for the typical material culture. From our limited knowledge it appears that the great central group from Banks land on the west to Smith sound in North Greenland is the home of the purest traits; here are snow houses, dogs harnessed with single traces, rectangular stone kettles; and the almost entire absence of wooden utensils.[2] In Greenland and Labrador the differences are small and apparently due more to modern European influences than to prehistoric causes.

[1] Mason asserts the occasional occurrence of coil baskets among the Central group.

[2] Consult: Boas, (*e*), (*f*), (*g*), (*h*); Murdoch; Nelson, E. W.

The limited study of archeological specimens by Dall, Solberg, and Boas suggests much greater uniformity in the prehistoric period, a conclusion apparently borne out by the collections made by Stefánsson on the north coast. While this is far from conclusive, it is quite consistent with the view that the chief intrusive culture is west of the Mackenzie river.

Mackenzie Area. Skirting the Eskimo area from east to west is a great interior belt of semi-Arctic lands, including the greater part of the interior of Canada. Hudson bay almost cuts it into two parts, the western or larger part occupied by the Déné tribes, the eastern by Algonkins, the Saulteaux, Cree, Montagnais, and Naskapi. The fauna, flora, and climate are quite uniform for corresponding latitudes which is reflected to some extent in material culture so that we should be justified in considering it one great area;[1] this would, however, not be consistent with less material traits according to which the Déné country is considered as a distinct area. For this reason we shall treat the region under two areas.

Our knowledge of the Déné tribes is rather fragmentary, for scarcely a single tribe has been seriously studied. Aside from the work of Father Morice we have only the random observations of explorers and fur traders. It is believed that the Déné tribes fall into three culture groups. The eastern group: the Yellow Knives, Dog Rib, Hares, Slavey, Chipewyan, and Beaver; the southwestern group: the Nahane, Sekani, Babine, and Carrier; the northwestern group comprising the Kutchin, Loucheux, Ahtena, and Khotana.

[1] The chief cultural bond through this region is the use of the caribou. The caribou ranged from Maine to Alaska and throughout all this area furnished the greater part of the clothing and tents and a considerable portion of the food. They could not be taken easily in summer but in winter were killed in drives, on the ice, or after a thaw, in the water. They were also snared. All of these methods were known from Alaska to Newfoundland. Between the Mackenzie and Hudson bay ranged the barren ground variety, whose habits were somewhat like those of the buffalo on the Plains, and the tribes in reach of their range lived upon them almost as completely as did the Indians of the Plains upon the buffalo. (See Pike, chap. 4; for map see Madison Grant in the *Seventh Annual Report, New York Zoological Society.*) Along with these widely distributed caribou traits go the great use of spruce and birchbark for canoes and vessels, babiche, and bark fiber, toboggans, and skin or bark-covered tents, the use of snares and nets. .

The Chilcotin are so far removed culturally that we have placed them in the Plateau group and the Tahltan seem to be intermediate to the North Pacific center.

Of these three groups the southwestern is the largest and occupies the most favorable habitat. From the writings of Father Morice a fairly satisfactory statement of their material cultures can be made, as follows: All the tribes are hunters of large and small game, caribou are often driven into enclosures, small game taken in snares and traps; a few of the tribes on the headwaters of the Pacific drainage take salmon, but other kinds of fish are largely used; large use of berries is made, they are mashed and dried by a special process; edible roots and other vegetable foods are used to some extent; utensils are of wood and bark; no pottery; bark vessels for boiling with and without use of stones; travel in summer largely by canoe, in winter by snowshoe; dog sleds used to some extent, but chiefly since trade days, the toboggan form prevailing; clothing of skins; mittens and caps; no weaving except rabbitskin garments,[1] but fine network in snowshoes, bags, and fish nets, materials of bark fiber, sinew, and babiche; there is also a special form of woven quill work; the typical habitation seems to be the double lean-to, though many intrusive forms occur; fish-hooks and spears; limited use of copper; work in stone weak.[2]

Unfortunately, the data available on the other groups are less definite, so that we cannot decisively classify the tribes. From Hearne, Mackenzie, and others it appears that the following traits

[1] These are often woven on a frame similar to the skin-dressing frame but without loom-like appliances.

[2] The following statement as to the archeology of the southwestern group may be noted:

"Throughout the whole extent of their territory, no mounds, enclosures, fortifications of a permanent character or any earthen works suggesting human agency are to be found, nor is their existence, past or present, even as much as suspected by any Carrier, Tsé'kéhne or Tsikòh'tin. In the same manner, pottery, clay implements, perforated stones, mortars, ceremonial gorgets, gouges, stone sledges and articles of shell either plain, carved, or engraved, have to this day remained unknown among them. They did formerly, and do still occasionally, use stone pestles. But for the mortars common among natives of most heterogeneous stocks, they substitute a dressed skin spread on the ground whereon they pound dried salmon, salmon vertebrae, bones, etc." (Morice, *a*, 35.)

prevailed over the entire Déné area: the twisting of bark fiber without spindle and its general use, reminding one of sennit; snares and nets for all kinds of game; the use of spruce and birchbark for vessels and canoes; basketry of split spruce root (*watap*) for cooking with hot stones noted by early observers; the toboggan; in summer the use of the dog to carry tents and other baggage; extensive use of babiche; the short-handled stone adze; iron pyrites instead of the firedrill and fungus for touchwood; the use of the cache; and above all, dependence upon the caribou. These seem to be the most characteristic traits of the Déné as a whole and while neither numerous nor complex are still quite distinctive.

Some writers have commented upon the relative poverty of distinctive traits and the preponderance of borrowed, or intrusive ones. For example, the double lean-to is peculiarly their own, though used slightly in parts of the Plateau area; but among the southwestern Déné we frequently find houses like those of the Tsimshian among the Babine and northern Carrier, while the Skena and southern Carrier use the underground houses of the Salish, and among the Chipewyan, Beaver, and most of the eastern group, the skin or bark-covered tipi of the Cree is common. Similar differences have been noted in costume and doubtless hold for other traits. Pemmican was made by the eastern group. According to Hearne some of them painted their shields with Plains-like devices. In the northwestern group we find some sleds of Eskimo pattern. Such borrowing of traits from other areas is, however, not peculiar to the Déné, and while it may be more prevalent among them, it should be noted that our best data is from tribes marginal to the area. It is just in the geographical center of this area that data fail us. Therefore, the inference is that there is a distinct type of Déné culture and that their lack of individuality has been overestimated.[1]

Eastern Woodland Area. We come now to the so-called Eastern Woodland area, the characterization of which is difficult. As just noted, its northern border extends to the Arctic and all the territory between the Eskimo above and Lakes Superior and Huron below

[1] Consult: Morice, (*b*), (*c*); Mackenzie; Hearne; Emmons, (*c*).

and eastward to the St Lawrence is the home of a culture whose material traits are comparable to those of the Déné. In brief, the traits are the taking of caribou in pens; the snaring of game; the considerable use of small game and fish; the use of berry food; the weaving of rabbitskins; the birch canoe; the toboggan; the conical skin or bark-covered shelter; the absence of basketry and pottery; use of bark and wooden utensils. The tribes most distinctly of this culture are the Ojibway north of the Lakes, including the Saulteaux, the Wood Cree, the Montagnais, and the Naskapi.

Taking the above as the northern group we find the main body falls into three large divisions:

1. The Iroquoian tribes (Huron, Wyandot, Erie, Susquehanna, and the Five Nations) extending from north to south and thus dividing the Algonkin tribes.

2. The Central Algonkin, west of the Iroquois: Some Ojibway, the Ottawa, Menomini, Sauk and Fox, Potawatomi, Peoria, Illinois, Kickapoo, Miami, Piankashaw, Shawnee, also the Siouan Winnebago.

3. The Eastern Algonkin: The Abnaki group, and the Micmac, not to be distinguished from the northern border group save by their feeble cultivation of maize, the New England tribes, and the Delawares.

While the Iroquoian tribes seem to have been predominant, their material culture suggests a southern origin, thus disqualifying them for places in the type group. The Eastern tribes are not well known, many of them being extinct, but they also seem to have been strongly influenced by the Iroquois and by southern culture. We must therefore turn to the Central group for the type. Even here the data are far from adequate, for the Peoria, Illinois, Miami, and Piankashaw have almost faded away. Little is known of the Kickapoo and Ottawa, and no serious studies of the Shawnee are available. The latter, however, seem to belong with the transitional tribes of the eastern group, if not actually to the Southeastern area. Our discussions therefore must be based on the Ojibway, Menomini, Sauk and Fox, and Winnebago.

Maize, squashes, and beans were cultivated (though weakly by

the Ojibway), wild rice where available was a great staple, maple sugar was manufactured; deer, bear, and even buffalo were hunted, also wild fowl; fishing was fairly developed, especially sturgeon fishing on the lakes; pottery was weakly developed but formerly used for cooking vessels; vessels of wood and bark were common; some splint basketry; two types of shelter prevailed, a dome-shaped bark or mat-covered lodge for winter, a rectangular bark house for summer, though the Ojibway tended to use the conical type of the northern border group instead of the latter; canoes of bark and dug-out were used where possible; the toboggan was occasionally used, snowshoes were common; dog traction rare; weaving of bark fiber downward with fingers; soft bags; pack lines; and fish nets; clothing of skins, soft-soled moccasins with drooping flaps, leggings, breech-cloth, and sleeved shirts for men, for women a skirt and jacket, though a one-piece dress was known; skin robes, some woven of rabbitskin; no armor, bows of plain wood, no lances, both the ball-ended and gun-shaped wooden club; in trade days the tomahawk; deer were often driven into the water and killed from canoes (the use of the jack-light should be noted); fish taken with hooks, spears, and nets, small game trapped and snared; work in skins confined to clothing; bags usually woven and other receptacles made of birchbark; mats of reed and cedar bark common; work in wood, stone, and bone weakly developed; probably considerable use of copper in prehistoric times; feather-work rare.

When we come to the Eastern group we find agriculture more intensive (except in the extreme north) and pottery more highly developed. Woven feather cloaks seem to have been common, a southern trait. Work in stone also seems a little more complex; a special development of steatite work. More use was made of edible roots.

The Iroquoian tribes were even more intensive agriculturists and potters, they made some use of the blowgun, developed corn-husk weaving, carved elaborate masks from wood, lived in rectangular long houses of peculiar pattern, built fortifications, and were superior in bone work.[1]

[1] Consult: Hoffman; Jenks; Parker, (*a*); Chamberlain; Carr; Turner; Skinner, (*a*), (*b*); Harrington; Willoughby.

Southeastern Area. The Southeastern area is conveniently divided by the Mississippi river, the typical culture occurring in the east. As we have noted, the Powhatan group and perhaps the Shawnee are quite intermediate. These eliminated we have the Muskogean and Iroquoian tribes (Cherokee and Tuscarora) as the chief groups, also the Yuchi, Eastern Siouan, Tunican, and Quapaw. The Chitimacha and Atakapa differ chiefly in the greater use of aquatic foods. The Caddoan tribes had a different type of shelter and were otherwise slightly deflected toward the Plains culture. We have little data for the Tonkawa, Karankawa, and Carrizo, but they seem not to have been agriculturists and some of them seem to have lived in tipis like the Lipan, being almost true buffalo Indians. These thus stand as intermediate and may belong with the Plains or the Southwest area. The Biloxi of the east, the extinct Timuqua, and the Florida Seminole are also variants from the type. They were far less dependent upon agriculture and made considerable use of aquatic food. The Timuqua lived in circular houses and, as did the Seminole, made use of bread made of coonti roots (*Zamia primila*), the method of preparing suggesting West Indian influence. The eating of human flesh is also set down as a trait of several Gulf Coast tribes. Our typical culture then may be found at its best among the Muskhogean, Yuchi, and Cherokee.

The following are the most distinctive traits: great use of vegetable food and intensive agriculture; raised maize, cane (a kind of millet), pumpkins, watermelons, tobacco, and after contact with Europeans quickly took up peaches, figs, etc.; large use of wild vegetables also; dogs eaten, the only domestic animal, but chickens, hogs, horses, and even cattle were adopted quickly; deer, bear, and bison in the west were the large game, for deer the stalking and surround methods were used; turkeys and small game were hunted and fish taken when convenient (fish poisons were in use); of manufactured foods bears' oil, hickory-nut oil, persimmon bread, and hominy are noteworthy, to which we may add the famous "black drink"; houses were generally rectangular with curved roofs, covered with thatch or bark, also often provided with plaster walls

reinforced with wicker work; towns were well fortified with palisades, dug-out canoes; costume was moderate, chiefly of deerskins, robes of bison, etc., shirt-like garments for men, skirts and toga-like upper garments for women, boot-like moccasins for winter; some woven fabrics of bark fiber, and fine netted feather cloaks, some buffalo-hair weaving in the west; weaving downward with the fingers; fine mats of cane and some corn-husk work; baskets of cane and splints, the double or netted basket and the basket meal sieve are special forms; knives of cane, darts of cane and bone; blowguns in general use; good potters, coil process, paddle decorations; skin dressing by slightly different method from elsewhere (macerated in mortars) and straight scrapers of hafted stone; work in stone of a high order but no true sculpture; little metal work.[1]

Southwestern Area. In the Southwestern area we have a small portion of the United States (New Mexico and Arizona) and an indefinite portion of Mexico. For convenience, we shall ignore all tribes south of the international boundary. Within these limits we have what appear to be two types of culture: the Pueblos and the nomadic tribes, but from our point of view (material culture) this seems not wholly justifiable since the differences are chiefly those of architecture and not unlike those already noted in the Eastern Woodland area. On account of its highly developed state and its prehistoric antecedents, the Pueblo culture appears as the type. The cultures of the different villages are far from uniform, but ignoring minor variations fall into three geographical groups: the Hopi (Walpi, Sichumovi, Hano [Tewa], Shipaulovi, Mishongnovi, Shunopovi, and Oraibi); Zuñi (Zuñi proper, Pescado, Nutria, and Ojo Caliente); and the Rio Grande (Taos, Picuris, San Juan, Santa Clara, San Ildefonso, Tesuque, Pojoaque, Nambe, Jemez, Pecos, Sandia, Isleta, all of Tanoan stock; San Felipe, Cochiti, Santo Domingo, Santa Ana, Sia, Laguna, and Acoma, Keresan stock). The culture of the whole may be characterized first by certain traits not yet found in our survey of the continent; viz., the main dependence upon maize and other cultivated foods (men did the cultivating and weaving of cloth instead of women as above);

[1] Consult: Swanton; Speck; Jones; Adair; Mooney, (*b*); MacCauley.

the use of a grinding stone instead of a mortar; the art of masonry; loom or upward weaving; cultivated cotton as textile material; pottery decorated in color; a unique type of building; and the domestication of the turkey. These certainly serve to sharply differentiate this culture.

While the main dependence was placed on vegetable food there was some hunting; the eastern villages hunted buffalo and deer, especially Taos. The most unique hunting weapon is the flat, curved rabbit stick. Drives of rabbits and antelope were practised. The principal wild vegetable food was the piñon nut. Of manufactured foods piki bread is the most unique. In former times the villages often traded for meat with the more nomadic tribes. Taos, Pecos, and a few of the frontier villages used buffalo robes and often dressed in deerskins, but woven robes were usual. Men wore aprons and a robe when needed. In addition to cloth robes, some were woven of rabbitskin and some netted with turkey feathers. Women wore a woven garment reaching from the shoulder to the knees, fastened over right shoulder only. For the feet hard-soled moccasins, those for women having long strips of deerskin wound around the leg. Pottery was highly developed and served other uses than the practical. Basketry was known, but not so highly developed as among the non-Pueblo tribes. The dog was kept but not used in transportation and there were no boats. The mechanical arts were not highly developed; their stone work and work in wood while of an advanced type does not excel that of some other areas; some work in turquoise but nothing in metal.

The Pima once lived in adobe houses but not of the Pueblo type, they developed irrigation but also made extensive use of wild plants (mesquite, saguaro, etc.). They raised cotton and wove cloth, were indifferent potters, but experts in basketry. The kindred Papago were similar, though less advanced. The Mohave, Yuma, Cocopa, Maricopa, and Yavapai used a square, flat-roofed house of wood, did not practise irrigation, were not good basket makers (excepting the Yavapai), but otherwise similar to the Pima. The Walapai and Havasupai were somewhat more nomadic.

The preceding appear to be transitional to the Pueblo type,

but when we come to the Athabascan-speaking tribes of the eastern side of the area we find some intermediate cultures. Thus, the Jicarilla and Mescalero used the Plains tipi, they raised but little, gathered wild vegetable foods and hunted buffalo and other animals, no weaving but costumes of skin in the Plains type, made a little pottery, good coil baskets, used glass-bead technique of the Plains. The Southern Ute were also in this class. The western Apache differed little from these, but rarely used tipis and gave a little more attention to agriculture. All used shields of buffalo hide and roasted certain roots in holes. In general while the Apache have certain undoubted Pueblo traits they also remind one of the Plains, the Plateaus, and, in a lean-to like shelter, of the Mackenzie area.[1]

The Navaho seem to have taken on their most striking traits under European influence, but their shelter is again the up-ended stick type of the north,[2] while their costume, pottery, and feeble attempts at basketry and formerly at agriculture suggest Pueblo influence.

Thus in the widely diffused traits of agriculture, metate, pottery, and to a less degree the weaving of cloth with loom and spindle, former use of sandals, we have common cultural bonds between all the tribes of the Southwest, uniting them in one culture area. In all these the Pueblos lead. The non-Pueblo tribes skirting the Plains and Plateaus occupy an intermediate position, as doubtless do the tribes to the southwest, from which it appears that after all we have but one distinct type of material culture for this area.[3]

Widely Distributed Traits

Before closing this descriptive survey of material culture we may call attention to certain traits that transcend the bounds of culture areas and cannot, therefore, be so successfully localized. The bow was universal, likewise the simple art of twisting string

[1] See Goddard, p. 134.

[2] We refer to the older type of hogan and not the modern form. We have seen photographs taken by Dellenbaugh among the Paiute north of the Colorado, showing brush shelters, but apparently supported by three or four interlocking poles. The foundation for the older Navaho hogan was three posts similarly arranged.

[3] Consult: Goddard; Russell; Nordenskiöld; Mindeleff; Cushing, (*a*), (*b*).

from vegetable or animal fiber. The firedrill is another, usually the simple hand form. The domestication of the dog was practically universal, but his use for bearing burdens and as a draft animal was limited to a few areas. The smoking of tobacco in a pipe was everywhere except in the extreme north. Curiously enough, the cultivation of tobacco, while not universal, was practised in localities in every area, except the Arctic and possibly the Mackenzie. The soft-tan for deerskin, its treatment by smoke, and the use of the beaming tool are found in some parts of every area. The snowshoe was used wherever the climate or elevation made it necessary. Among other less universal traits are the use of canoes, the true moccasin, basketry, pottery, cooking with stones, weaving downward, maize culture, chipping of stone, the grooved ax and maul, quill and bead technique, sewing with sinew and without a needle, the bowdrill. These traits all tend to show certain differences as we pass from one area to another, yet in their generality they must be considered as inter-area characteristics, the significance of which will be discussed under another head.

Culture Centers and their Problems

If now we consider the brief review of traits we have just made, we note that a culture area as usually defined tends to have well within its borders a group of tribes whose cultures are quite free from the characteristic traits of other areas, or present the type of the area. It is also apparent that these typical tribes are not scattered at random over the area but are contiguous, or definitely localized. We experienced, when the necessary data were available, no great difficulty in selecting the more typical tribes, but we found it often quite impossible to decide to which of two or more areas some of the less typical tribes belonged. It seems then, that while the grouping of all the tribes in inclusive areas is convenient and often useful, the more correct way would be to locate the respective groups of typical tribes as culture centers and classify the other tribes as intermediate or transitional. Thus from this point of view we have nine localities, or material culture centers, between which there are few traits in common: (1) Central Algonkin,

(2) Southeastern, (3) Pueblo, (4) Plains, (5) Plateau, (6) California, (7) North Pacific, (8) Mackenzie, and (9) Eskimo. The remaining tribes then fall naturally into intermediate groups: for example, as intermediate to the Central Algonkin and Plains cultures are the Plains-Ojibway, Plains-Cree, Santee, Iowa, and perhaps the Arikara, Mandan, Hidatsa, Peoria, Ponca, Omaha, Pawnee, Oto, Kansas, Missouri, Osage, and Illinois; intermediate to the Plains and the Southeast, the Wichita, the Caddo tribes, the Tonkawa, and Karankawa. In this way we are also able to handle more difficult cases, as the Southern Ute and Jicarilla Apache who stand intermediate to the Plains, Pueblo, and Plateau cultures. On more general grounds a classification by culture to be serviceable must avoid the necessity for too great exactness. The division of a whole continent between a number of areas demands a kind of exactness that is irrelevant to the problems involved. In this respect the method of localizing centers is quite superior, for they can be located without difficulty by the habitats of the few tribes manifesting the separate cultures in their most typical forms.[1] It is then of no great moment if one is omitted, for by the observed rule of geographical continuity it will be found in contact with the type group and hence relatively one of the least intermediate tribes. However, our purpose is not to establish a method of classification but to discuss certain problems arising from the foregoing observations of trait distribution.

[1] The most typical tribes at each center are designated on the map accompanying this article by underlining. The material culture centers are numbered as follows: 1, The Arctic Area; 2, The Mackenzie Area; 3, The North Pacific Area; 4, The Plateau Area; 5, The California Area; 6, The Plains Area; 7, The Eastern Woodland Area; 8, The Southwestern Area; 9, The Southeastern Area. As stated above the designation by centers is far less arbitrary than the division of the continent into inclusive areas; yet practical considerations make such a demarkation desirable. Accordingly, we have tentatively drawn lines grouping the tribes by their nearest centers. The ideal is to draw the lines through the points of cultural balance, or at the place where the characteristic material traits of one center equal in number and weight those of other centers. Lack of full data and well developed methods for the evaluation of traits makes it impossible to place these lines with geographical precision; hence they must be taken as approximate. This is particularly true of points where three material areas meet, as in Nevada, Texas, and Alaska. Yet, notwithstanding these uncertainties, it is quite improbable that the error of position at any point will exceed that of a single tribal unit. This map was first published in hall labels for the American Museum of Natural History.

ESKIMO I
ESKIMO VIII
KHOTANA
LOUCHEUX
ESKIMO VII
ESKIMO VIII
AHTENA
HARE
ESKIMO VI
ESKIMO V
ESKIMO I
1
ESKIMO II
NAHANE
STRONG-BOW
DOG-RIB
YELLOW-KNIVES
ESKIMO III
ESKIMO IV
TAHLTAN
2
ESKIMO II
CARIBOU-EATERS
SEKANAIS
SLAVEY
HAIDA
3
BABINE
CARRIERS
BEAVER
NASKAPI
CHIMMESYAN
CHIPEWYAN
BELLA BELLA
BELLA COOLA
TCILKOTIN
BEOTHUK
SWAMPY-CREE
KWAKIUTL
COMOX
SHUSHWAP
THOMPSON
SARSI
BLACKFOOT
NOOTKA
LILLOOET
4
COWICHAN
OKINAGAN
PLAINS-CREE
PLAINS-OJIBWAY
CHIMAKUAN
MAKA
METHOW
BLOOD
SAULTEAUX
MUSKEKOWUG
EASTERN CREE
MONTAGNAIS
SONGISH
SQUAMISH
KUTENAI
COUER D'ALENE
KALISPEL
GROS VENTRE
ASSINIBOINE
PIEGAN
BUNGI
ABITTIBI
MALECITE
MICMAC
CHEHALIS
NISQUALLI
SPOKAN
FLATHEAD
ABNAKI
PASSAMAQUODDY
PENOBSCOT
CHINOOK
QUINAIELT
CAYUSE
NEZ PERCE
OJIBWAY
NIPISSING
ALGONKIN
OTTAWA
TILLAMOOK
MOLALA
UMATILLA
WISHRAM
ALSEA
KALAPOOIA
ARIKARA
HIDATSA
MANDAN
MISSISAUGA
PENNACOOK
MASSACHUSETTS
KUSA
YONKALLA
UMPQUA
CROW
CHEYENNE
SANTEE
YANKTON
MENOMINI
WINNEBAGO
SAUK-FOX
7
HURON
POKUMTUK
PEQUOT
TAKELMA
KLAMATH
KAROK
MODOC
BANNOCK
IROQUOIS
NARRAGANSET
TOLOWA
YUROK
HUPA
ACHOMAWI
ATSUGEWI
SHOSHONI
WIND RIVER
TETON
WYANDOT
MUNSEE
MAHICAN
METOAC
WINTUN
SHASTA
6
FOREST POTAWATOMI
PEORIA
PIANKASHAW
ERIE
WYANA
MAIDU
WAILAKI
KATO YUKI
PONCA
PAWNEE
OMAHA
IOWA
PRAIRIE POTAWATOMI
DELAWARE
POMO
WASHO
PAVIOTSO
GOSIUTE
UTE
5
SUSQUEHANNA
WAPPO
ARAPAHO
MIWOK
KAWAIISU
OTO
MIAMI
YOKUTS
KICKAPOO
CHEYENNE
ILLINOIS
KERN RIVER
PAIUTE
KANSAS
MISSOURI
SHAWNEE
SALINAN
MONO
UTE
NAVAJO
SUPAI
HOPI
OSAGE
WALAPAI
TAOS
KIOWA-APACHE
JICARILLA
8
KIOWA
WICHITA
SERRANO
CHEMEHUEVI
PUEBLO VILLAGES
TUSCARORA
SAN LUISEÑO
MOHAVE
YAVAPAI
TONTO
ZUÑI
QUAPAW
CHEROKEE
CATAWBA
DIEGUEÑOS
PIMA
LAGUNA
ACOMA
UPPER-CREEKS
CHICKASAW
YUMA
MARICOPA
SAN CARLOS
CADDO
CHOCTAW
COMANCHE
KOASATI
KUSA
YUCHI
CHIRICAHUA
MESCALERO
KICHAI
9
PAPAGO
WACO
TUNICAN
LOWER-CREEKS
TAWAKONI
NATCHEZ
ALIBAMU
OPATA
SERI
TONKAWAN
ATAKAPA
CHITIMACHA
BILOXI
APALACHEE
SEMINOLE
TARAHUMARE
LIPAN
KARANKAWA
YAQUI
TIMUQUANAN
MAYO
TEPEHUANES
CARRIZO
ARAWAK
CORA
HUICHOL
YUKAGHIR
CHUCKCHI
ESKIMO X
TUNGUS
KORYAK
ALEUT

Let us, therefore, return to the observed peculiarity of geographical continuity among the habitats of the tribes making up the centers. The fact is plain and has scarcely escaped the notice of a single serious student. Yet, while many have called attention to the inter-gradations of culture, few, for example, have considered the significance of the rarity of abrupt breaks in its continuity in respect to the question of stability *vs.* migration of political units. And again, the significance of this observed continuity relative to the problem of independent invention *vs.* diffusion of traits seems to have almost escaped notice.

One of the first problems to confront us is that of the permanency of these material culture centers. In the first place their very continuity is a strong presumption that their points of origin are to be found near their historic bounds. For instance, we note that the tribes in a culture center have only cultural unity, for they are scarcely ever united politically or speak mutually intelligible languages. It is curious how such uniformity of material culture may be found between neighboring tribes who when on the warpath kill each other at sight: it would seem that such hostility is more of a game than real war. But to return to our problem, such lack of unity makes it difficult to see how in case of invasion from without a simple reaction to migration factors could move the whole group of disparate tribes as a body; it seems much more reasonable that their continuity would be broken. Upon these points we have some check data. For example, in California, the Plains, and Pueblo centers we have great material uniformity with notorious linguistic and political diversity. Then we have the case of the Cheyenne who seem to have been forced into the Plains center where they readily passed from an intermediate state to a typical one.[1] Likewise, the Shoshonean Hopi in the Pueblo center, the Athapascan Kato in California, and the Chilcotin in the Plateau area seem each to have been caught up by these several cultural swirls and reduced to the type. These examples, however, only suggest the tendency for the various centers to preserve their continuity. On the other hand, definite examples of tribes being

[1] Mooney, *(a)*.

forced outward into intermediate positions do not readily come to hand. The Iroquois present a probable case. The evidence seems to warrant the assumption that they are of southern origin and erupted into the Eastern Woodland area, virtually cleaving the continuity of the Algonkin tribes.[1] Just what happened to their material culture can not be stated for want of careful studies. The use of the dome-shaped Algonkin wigwam on both sides of the Iroquois hiatus; and the probable Iroquois adoption of the art of maple-sugar making on the one hand, with the failure of the Iroquois to impart correspondingly characteristic traits to the flanking Algonkin on the other, is consistent with our assumption, but little weight should be given it until more carefully investigated. Yet, in any event, the Iroquois of historic times were not typically southeastern in culture and are at least suggestive negative evidence in support of our assumption. Granting such a disruption of the older Algonkin center, the somewhat untypical culture of the Central Algonkin is intelligible. In his studies of the Plateau center Boas seems to justify the assumption of a Salish migration to the coast; but if such did occur, the typical culture broke down and became intermediate, since we find it so in historic times. Thus what evidence we have seems to indicate that by separating a tribe from a center its material culture is made intermediate and by joining a tribe to a center its culture is made typical. Hence, unless we find data to support the wholesale movement of a material culture center, we must assume stability of habitat during its historic life. We need not, however, assume stability as to its political, linguistic, and somatic unit constituents; but it is clear that abrupt wholesale displacement of them or anything short of the gradual infiltration of new units would tend to destroy the type. We have been long familiar with the lack of correlation between culture, language, and somatic type, but it is doubtful if we yet comprehend the phenomenon.

In material culture we have one of the two great groups of anthropological problems for whose solution the ethnological and archeological methods are equally serviceable. It is chiefly by the

[1] Boyle.

use of the latter method that we approach the problem as to the relative ages of the historic centers and the existence of earlier centers. As yet, the results of archeological studies have not advanced sufficiently to give very satisfactory answers to these questions, but so far as they go they favor the great age of these centers. Thus the work of Smith in the Plateau center indicates considerable age and fails to reveal an equally developed predecessor.[1] Again, in California, Nelson finds very old shell deposits but still nothing radically different from the type culture.[2] In the Southwest we have evidence of long occupancy by the Pueblo type. Smith's yet unpublished work in the Plains center brings to light no predecessors. In the Central Algonkin center, the case is not clear, owing to the uncertainty as to the mound culture in the western part of the Eastern Woodland area, but in the eastern part around the lower Hudson and in New Jersey we find a condition similar to that in the Plateau center.[3] Thus, in a general way the geographical stability of our material culture centers is confirmed by archeological evidence.

Perhaps it should be noted that the tendency of archeological investigation is to show some development in richness and complexity. Thus Smith's results in the Plateau center and Nelson's shell-heap work in California show simpler and somewhat cruder cultures for the lower parts of their deposits, but the persistence of

[1] Smith, (*a*).

[2] Nelson, N. C., (*a*), (*b*).

[3] Skinner, (*c*). As we have suggested, it is possible that the Iroquoian expansion struck the old and original center of the Algonkin tribes. Mr Parker finds sites in New York where Iroquoian remains overlie others of Algonkin type, yet many Iroquoian sites bear every indication of respectable age. (Parker, (*b*), p. 88.) Hence the present Algonkin center can not be a recent development. Professor Dixon's recent paper (pp. 549–566) calls attention to the assumed superposition of cultures on the Atlantic side of the continent; but in no case has a careful analysis of the area been made. Yet we are here concerned only with the archeology of the territory occupied by the few tribes forming our material centers, and the complications cited by Dixon are chiefly in the territories of intermediate tribes and on the extreme margins of the continent. Our discussion has not sought to make the centers the first American cultures, but only to show that they are relatively old. We may add that one of the best ways to approach the correlation of eastern ethnology and archeology would be to investigate the territory at a center and use the types thus obtained as the point of departure.

many fundamental forms throughout suggests that the succeeding cultures were built upon the foundation laid down at what seems to have been the period of earliest occupancy. This also seems to be true of shell and other deposits in the vicinity of New York City. Even in the Pueblo center we find a similar condition. So the best interpretation we can give the observed data is that in the formative period of North American material cultures the types now appearing in our centers were localized but less differentiated and that the striking individuality they now possess resulted from a more or less gradual expansion along original lines.

If, as we now have reason to believe, the material cultures of these centers possess great vitality, are often able to completely dominate intrusive cultural units and so keep to their habitats as it were, it may be well to inquire if there are not objective causes for this persistence of localization.

It is natural to suspect the subtle influence of the environment, since the fauna and flora of the locality are certain to leave their stamps upon material culture. One of the most distinctive characteristics is the tendency to specialize in some one or two foods. In California it is the acorn; Plateau, salmon and roots; on the North Pacific coast, sea food; Mackenzie, caribou; Plains, the buffalo; Southwest, maize; Southeast, maize and roots; the Eastern Woodlands, wild rice and maple sugar. We here refer to the prepared and stored foods, the staples; though in quantity they may at times be minor foods, they play a very necessary rôle. All the centers have more or less elaborate processes of preparation involving technical knowledge: for example, the making of acorn flour and bread, the roasting of camas, etc. These processes tend to spread throughout the area of supply. Thus the acorn industry extends well up into Oregon far beyond the California center; the roasting of camas to the mouth of the Columbia and also to the Blackfoot of the Plains, etc. Again we note certain specializations of manufacture; California, baskets; North Pacific coast, boxes and plank work; the Plains, rawhide work (parfleche, bags, etc.); Mackenzie, birch-bark (canoes, vessels, etc.); Plateau, sagebrush weaving; Southwest, textiles and pottery; Southeast, cane and

fiber weaving; the Eastern Woodlands, knot bowls and bass fiber weaving. Types of shelter present similar distributions and so do many other traits. All of these traits are seen to reach out far beyond the borders of the respective type centers. While foods are quite dependent upon the faunal and floral distributions, some other traits are not (pottery, for example). In any case the people have but chosen a few of the possibilities and specialized in them, leaving many other resources untouched. Apparently we have here the fixity of habit or custom, a group having once worked out a process, like the use of acorns, its practice tends to find its way over the contiguous acorn area and, where established, to persist. The successful adjustment to a given locality of one tribe is utilized by neighbors to the extension of the type and to the inhibition of new inventions, or adjustments. Therefore, the origin of a material center seems due to ethnic factors more than to geographical ones. The location of these centers is then largely a matter of ethnic accident, but once located and the adjustments made, the stability of the environment doubtless tends to hold each particular type of material culture to its initial locality, even in the face of many changes in blood and language. Perhaps here at last we have laid bare the environmental factor in culture and chanced upon the real significance of the long observed lack of correlation between culture, language, and anatomy.

Before we leave this subject it may not be amiss to examine the cultural relations of the few tribes constituting one of our centers. It is an axiom that absolute cultural identity is impossible, for this is but another way of asserting variation. We may expect, therefore, certain tribal individualities. Our conception of a type unit is one in whose culture there are no appreciable traits characteristic of other centers. When we select a group of tribes as the constituents of a center, we do not assume absolute identity in culture; for the facts are plain, that the gradation observed among the intermediate tribes extends into the typical group. It must follow, therefore, that some one tribe is the most typical, or manifests the type culture in its purest form. As an experiment, take the Plains group to which the Blackfoot, Gros Ventre, Assiniboine, Crow,

Teton-Oglala, Arapaho, Cheyenne, Kiowa, and Comanche clearly belong. Then by cancellation proceed to eliminate the variants, or those tribes manifesting traits characteristic of other centers. If we take shelter, the brush lodge tendencies of the Comanche eliminate them; packing by dogs without the travois, the Crow, Kiowa, and Comanche; occasional water transportation in bark canoes, the Assiniboine (historical data); the use of fur caps, certain northern forms of bags, the Blackfoot and Gros Ventre; on historical data as to costume, the Cheyenne; absence of special forms of shirts for men, the Kiowa, Cheyenne, Arapaho, and Comanche; a one-eared tipi, the Kiowa and Comanche; and some use of hooded-coats for men, the Blackfoot, Gros Ventre, and the Crow. We have now eliminated all save the Teton-Oglala. The Arapaho stand next, and then the Crow. If we line these up according to certain parfleche peculiarities and certain types of bags frequent among westward intermediate tribes, we discount the Arapaho. If it were not for early historical data on the Cheyenne, they would lead the Arapaho. So far as the data go the Cheyenne since their migration were in most intimate contact with the Teton and the Arapaho. Thus our finding is consistent and also quite suggestive. We have good grounds for localizing the center of Plains culture between the Teton, Arapaho, Cheyenne, and Crow, with the odds in favor of the first.[1] When we turn to a map we find again geographical continuity, these four tribes being neighbors. Further, they are in the very heart of the area for the typical tribes. Similar treatment of other central groups gives analogous results, though not always so nicely balanced geographically. It seems, then, that when we come to deal with the distributions of associated material traits, we find certain points where specialization and individuality are greatest.

[1] Considerations of space make it necessary to omit a discussion of the relative significance of these traits and a justification of the procedure. See Galton's remarks (p. 270) on weighting cultural characters. The reducing of a center to a single tribe is presented only as the logical finale of our classification, the political identity of the tribe in question is not now important. It is clear that when we commit ourselves to a classification based upon the similarities of traits, and accept the principle of inter-gradation, we must expect to designate some one or two tribes as the most typical.

If we should proceed by the above method of determination, we should ultimately specify nine political or social units whose material cultures could be taken as the individualized American types. Thus these studies of distribution lead us into new and perplexing problems. We seem to be dealing with ethnic forces, the lines of whose radiation are approximately determinable, but whose directions of movement are by no means obvious. What are the points of origin? Are these nine hypothetical tribes the originators of these cultures, or even the perpetuators from whom all influences start? Or, are they but the resultants of forces moving in the opposite direction, and then from whence? One line of inquiry suggests itself. Since these centers may well be but the type units of a larger group, we may approach this problem by seeking for traits common to the centers and for evidence of their reaction upon each other, or in other words consider the distribution of the few very general traits previously enumerated.

The cultivation of maize was spread over a considerable part of the continent. It was universal in the Southwest; among all the tribes intermediate to the Plains, Central Algonkin, and Southeastern centers, except those of the extreme north and possibly the Tonkawa; all of the Southeastern area except a few on the Gulf coast, and all of the Eastern Woodland area except the extreme north. Scarcely any of the intermediate tribes in the California and the Plateau areas made even the feeblest of efforts to cultivate it. The most striking fact is that if you plot this distribution over an ethnographical map you have almost absolute continuity. This continuity also extends far down into Mexico and perhaps is continuous with the maize area of South America. In this case, we have no reason to doubt the direction of diffusion, for botanical evidence makes it certain that the art of maize cultivation arose south of the Rio Grande.[1]

Another interesting trait is pottery. All the tribes cultivating maize made some form of it, but it went somewhat farther into the California and Plateau areas. Yet from southern California northward to the limits of the North Pacific area, including the

[1] Harshberger.

greater part of the Mackenzie area, we have no certain traces of pottery in either historic or prehistoric times. In Alaska, however, it recurs among the Eskimo chiefly and extends eastward to Cape Parry at least. Some historical data make it probable that pottery was once made by all the type tribes of the Plains center and possibly by the Northern Shoshonean tribes. So disregarding for the present the pottery of the Arctic coast we have a distribution slightly more extensive but still coincident with the maize area. Internal continuity we have and also to the south far into South America. Roughly considered, this pottery is of two kinds, painted and incised (and stamped). The former prevails over the Southwest and eastward to the lower Mississippi, the remainder is incised or stamped and is confined chiefly to the Atlantic coast and Great Lake regions.[1] Here again we find continuity southward for painted ware. Unfortunately, we cannot call in extraneous evidence to prove the direction of pottery diffusion and it will scarcely do to trust to an analogy with maize. It has been reported that incised ware also occurs on the South American Atlantic coast.[2] That this is due to an older continuity between the two continents at large is unsupported by archeological evidence, but similar marked pottery from the West Indies suggests a regional and insular continuity.[3]

The southern origin of the blowgun is quite probable. We find it still in use among the Seminole of Florida and formerly known to most of the Southeastern tribes; it also occurs among the Iroquois. Perhaps in the same class may be placed the methods of preparing the coonti root, for the plant is found in the West Indies.

Weaving in its crudest forms is quite universal, but certain specialized forms can be definitely distributed. The art requires two unrelated processes, spinning and weaving. The fundamental art of twisting fibers into string is universal, but the Déné, Central Algonkin, Iroquois, Eastern Algonkin, and all of the tribes of the Southeastern area made thread of bark fibers. These were shredded

[1] Holmes, (*b*).

[2] Hrdlička, p. 151.

[3] De Booy, p. 425.

and twisted without spindles, so far as we know, the usual method being to roll the strands on the thigh or ankle.[1] The resulting thread was woven into pack straps, but especially into bags in the north. In the south, clothing seems to have been so made, and even footwear. The method of weaving was everywhere the same, the warp strands being suspended loosely from a rod or cord and the fabrication proceeding downward, the woof being inserted by the fingers. This type of weaving occurs in the Plateau and North Pacific Coast areas. In this region, however, the weaving is of two types. The intermediate North Pacific area produced blankets of goat and dog wool. While so far as we know the weaving was downward as before, a spindle has been used in historic times. In the Plateau area sagebrush bark fiber was coarsely twisted and joined by occasional woof strands. Among the intermediate Salish, and the Kwakiutl, this method was used with cedar bark. Among certain intermediate Alaskan tribes the method appears, but for bags only and not for clothing. In the Plateau area we have some evidence that the Shoshonean tribes used clothing of sagebrush, which we presume was made by the same method. The Shahaptian, however, seem not to have made blankets or clothing of fiber.

In the Southwest we have a high development of weaving with a true loom, or upward weaving, and the use of spindles.

Thus so far as our data go we have the spindle in two regions, the Southwest and the greater part of the Plateau and North Pacific areas. If its use could be established for the Shoshonean tribes of Nevada and Idaho we should have a continuous distribution from north to south, which taken in connection with the wide use of the spindle south of the Rio Grande would again indicate a southern origin. Unfortunately, we lack data on this point. That the spindle was recently introduced to the Salish area is suggested but not proven, by the absence of bone and stone spindle whorls in archeological collections.[2] In the Southeastern area there seems to have been some use of an improvised spindle, a

[1] Holmes, (*b*).

[2] Smith, (*a*).

stick bearing a ball of clay, but anything like a true spindle whorl is rare in archeological collections.[1] In this area, however, we must allow for contact with the Southwest.

As to the loom, we have also the use of a weaving frame in parts of the Mackenzie and Plateau areas.[2] Rabbitskin robes were made by wrapping the warp around a rectangular frame and some of the Salish made use of a loom frame with a continuous warp of spun goat or dog hair, the two processes doubtless connected historically. On the other hand, this use of a frame without a batten or held seems to have a restricted distribution and to be discontinuous with the Southwest, though here again we lack full data as to weaving technique, for the rabbitskin blanket extends well down through the Plateaus into the Southwest. We have previously suggested that the frame for the rabbitskin blanket may have been derived from the skin-dressing frame, in which case its independent origin would be probable. The direction of weaving for rabbitskin blankets among the Cree is downward and sometimes the warp is hung from a stick or cord,[3] and not wrapped around the frame. This brings us back to what seems a fundamental distinction between the weaving of the Southwest and the other areas. If we extend our data so as to include flexible baskets, we have practically a continuous distribution of downward weaving; or where the beginning is at the top of a suspended warp base, from the Aleutians, through the Tlingit, into the Déné, the northern Algonkin and thence to the Gulf and the Atlantic seaboard. Thus, it is clear that we have a widely distributed method of weaving developed on different lines from that of Mexico and the Andean region. The continuous wrapped warp on the simple frames of some Salish and Déné is also suggestive of the Southwest and in contrast to the Chilkat and Algonkin modes.

The art of basketry has a distribution similar to that of weaving. In one form or another it is found in every area from the Southwest to the Eskimo. The prevailing techniques are twine, coil, and

[1] Holmes, (*b*).

[2] See: Morice, (*a*); Skinner, (*a*); Teit, (*a*); Boas, (*a*).

[3] Skinner, (*a*).

splint. The art was rather weak in the Plains, its almost entire absence from the Plains center having been noted. In the main, basketry is found intensified in two regions, the western mountainous belt and the eastern Atlantic belt. Though coil baskets were occasionally made by the Central Eskimo, the Ojibway and possibly other Eastern and Southeastern Indians (Mason), they are characteristic of the western area where they have a continuous distribution from Alaska[1] to the Rio Grande. One peculiarity of this distribution is that it is inland, the Tlingit and practically all the tribes of the coast down to the Californian center using the twine method. On the other hand, the twine technique is practised in the coil area, except perhaps in the extreme north. As we have previously noted, there is a continuous distribution for the flexible basket and bag woven from suspended warp, from the Aleutian islands southeastward to the Atlantic, which gives us another interesting problem. In contrast to this technique we have the stiff warp twine baskets of the Salish, Shoshone, California, and the Southwest tribes, again a continuous distribution suggesting a common origin. Likewise, the coil technique of this western region is distinct, because the few specimens known from the Ojibway and the Central Eskimo are sewed with a wide open stitch in a manner that indicates a different process concept.

In the east basketry specialized in cane and splints: The very strong development of cane basketry in the Southeast, taken with the previously noted cultural intrusions into the Eastern Woodland area, makes it probable that the wood splint technique is historically connected with that of cane. Cane basketry is also highly developed in eastern South America, to which the West Indies give us insular continuity.

The limits of this paper forbid the further discussion of textile distribution, but it is now clear that it presents some of the most interesting problems in material culture. The study of forms, methods of ornamentation, etc., readily differentiates local variations of greater or less distribution, the comprehensive comparison

[1] Coil baskets also extend into Siberia. The distribution for the whole North American continent has been worked out by O. T. Mason.

of which would go far toward solving the historical relations of our centers.

Coincident with the greater part of the western basketry region are the limits of stone boiling. Naturally, its distribution follows closely the outskirts of the pottery-using region. All the pottery-making tribes are pot boilers as are also the Eskimo. The extreme northern Algonkins and part of the Déné used stones but often hung bark vessels over beds of coals, a pot-boiling method. The Plains tribes were on the border line between the two great areas and varied accordingly.

Clothing is another feature of interest. The Eskimo were heavily clothed, the Déné but slightly less so. The Interior Salish, the most Eastern Shoshone, and even some Apache of the Southwest covered practically the whole body with clothing, usually of skins. In contrast to this the Indians of California and the whole Pacific Coast belt wore little clothing, except in the far north. In the Plains, the tribes of the center resembled the Shoshone while the Eastern intermediate tribes were inclined to nudity. East of the Mississippi, except in the far north, the tendency was likewise to nudity. Even in the Pueblo area men seldom wore shirts or leggings. Again we have one of those curious continuities in distribution, the real clothing of the body stretching across the Eskimo, Déné, and extreme northern Algonkin territories, dipping down through the Plateau and Plains areas almost into the Southwest where climatic conditions certainly made it inessential. This bears the earmarks of a northern intrusion and sets up at new angles the problem of the Shoshonean tribes and the beginnings of Plains culture.

In a similar manner dog transportation dips into the southern Plains. In winter dogs are used with sleds by the Eskimo and some adjacent tribes (Hearne), but in summer the Eskimo west of Hudson bay use them for packing and the dragging of tent poles, precisely as described by Coronado for the extreme southern Plains. Between these two points we have a continuous distribution of packing or dragging bundles by dogs. The wide distribution in the north and its apex-like form in the south suggest a northern origin.

If space permitted we could make a special study of specific articles of dress, the basket hat in the west, the moccasin, the rabbitskin coat, the turkey-feather mantle, etc., which, as with the textile arts, would develop many important problems. Many other traits could be studied in this way. We may note the problems of defensive armor in the Northwest,[1] the seeming Asiatic origin of the sinew-backed bow[2] and the bowdrill, the recent introduction of the Asiatic pipe among the Eskimo, etc.

Among other points this hasty sketch of widely distributed traits has developed at least one general line of cleavage. If we draw a line southward through the extended Plains center, along the eastern limits of the Rocky mountains, we divide the continent into two parts each of which in respect to the traits just discussed has some claim to cultural distinction. On either side of this line within the United States the cultures stand out clearly. In the main, it is along this line that textiles are differentiated, likewise in part maize and pottery. Clothing also changes here. Certain traits in the east seem to have pushed up from South America across the West Indies, others appear north of the Rio Grande as the outposts of the higher cultures of the south. Across northern Canada from east to west is the caribou culture with its associated traits. The line of cleavage we have noted in the United States seems to be the extended southern apex of the caribou area. It almost separates the east from the west, and raises a number of problems we have no space to discuss. Thus our consideration of widely distributed material traits has developed at least three general areas, with each of which the respective centers have something in common. The suggestion is that, more often than not, the tendency is for cultural continuity to range north and south on each side of this line, hence we must assume some historical connections between the respective centers. Yet, so far, there appear no indications that all the centers of the west can be classed as the former constituents of a single center; but on the east it seems quite probable that the Algonkin center has developed from an

[1] Hough; Laufer.

[2] Mason, (*a*).

ancient culture intermediate to the caribou and southeastern centers.

In the foregoing discussion of distribution we have seen positive proof of the northern spread of an important trait, maize culture engulfing three contiguous centers, and noted the analogous distribution of several other traits in which the probability of a southern origin is very great (painted pottery, loom weaving, blowguns, and tobacco). Again we have certain probabilities of culture infusion from Asia by way of Alaska, though less definite because in some cases the evidence favors the movement from America to Asia rather than the reverse. In Asia we seem to have similar continental conditions, for the great culture centers lay toward the south and exerted a strong influence upon the north, leaving the two continents in contact where their later cultures were weakest. We could, however, dismiss this peculiar inter-continental relation at once, if it were not for the belief that the Indians came from Asia via Alaska, at a relatively recent period. Each year of anthropological advance has seen the assumption become more and more of a conviction that this peopling of America could not have been much earlier than the dawn of the neolithic period in the Old World.[1] Granting this, we see that our material culture centers lie in the path of invasion and, if of considerable age, may even represent original intrusions from the Old World. As we have noted, archeological evidence seems not only to confirm the long durations of most of these centers but fails to reveal the remains of extinct predecessors.

If cultural groups came from the Old World with a neolithic or a very late paleolithic horizon they could have brought with them the following traits: knowledge of fire (presumably the wooden drill), chipping and polishing stone, the bow, the bone harpoon point, the notched arrowhead, the dog, elemental knowledge of skin dressing. There is no reason why they may not have known the simple art of twisting string, the use of nets and snares,

[1] Our complete ignorance of paleolithic Asia is now the chief obstacle to a satisfactory theory for the origin of the American race. For all we now know late paleolithic Europe may have been contemporaneous with early neolithic Asia.

been expert hunters, and in fact have possessed all the fundamental concepts of all the more general mechanical processes. This list, it will be observed, includes a considerable number of the traits common to our centers and may possibly represent the original culture of the immigrants. Yet, until we know a great deal about the earliest archeology of northern Asia, this must remain the merest speculation. On the other hand, certain very widely distributed traits are more likely of American origin and therefore must represent either older traits than those peculiar to the respective centers or more recently diffused ones. It will be noted, however, that such of these common traits as appear truly American are found to be more highly specialized and less fundamental. In short, all the status of the case seems to warrant, is the suggestion that except where a definite Old World similarity is found, most of the widely distributed traits of North America seem to have emanated from centers south of the United States, and not from Alaska, or from the Old World. This general fact has long been one of the traditions of our science, but the determination of the general northern trend of the most distinctively American traits must remain one of our problems and especially the harmonizing of our conclusions with the belief in an Asiatic origin.

Again we may consider what would happen to our centers, if we subtracted the traits suggesting the south and also those traits that seem to have come into Alaska recently. Suppose we cancel out agriculture, pottery, loom-weaving, and the use of tobacco, not to mention several minor traits. These would at once greatly reduce material differences, making all dependent upon game and wild vegetables and regulating their lives according to the resources of their respective habitats. In this way it is clear that we might reduce our centers to a primitive culture not unlike that of early neolithic Europe, whence it would not be unlikely that the development of some type individualities began after the first dispersion of tribes over the continent. In other words, there are various reasons for believing in the legitimacy of problems relating to the permanency and relatively early origin of centers. Finally, we have found a probable answer to our question as to the former genetic

relations of the material centers: viz., that in so far as they are individual they are quite independent and as indicated by the environmental, ethnological, and archeological data, developed their peculiarities approximately within the respective territories of the typical groups of tribes.

We have noted that in the few important archeological studies made for our centers, the earliest forms of culture are less complex and that there is likewise a suggestion of far greater similarity between the respective centers at that time. If then we cancel out the probable intrusive traits, as above, and discount the individualization of our centers, we reach a simpler form of culture in which the common origin of our centers is possible. Also, the general quantitative similarity of these residual traits to late paleolithic or early neolithic culture is apparent.

We may again revert to the probable antiquity of origin. For the Eskimo and Mackenzie area we have no good archeological data, but for the remaining we have at least suggestive data, and the only one for which there appears a reasonable doubt is the Plains center. This doubt arises principally from more or less vague historical indications of recent migrations on the part of the typical tribes; thus the Cheyenne are considered recent arrivals, the Plains-Cree and Plains-Ojibway are clearly migrants, the Sarsi, Arapaho, Gros Ventre, Comanche, and Blackfoot have linguistic affiliations that make their migrations quite probable; the Crow and Teton have very near relatives among the intermediate group, raising doubts as to their original habitats. In short, with the possible exception of the Kiowa, all may be suspected as relatively recent intruders. No such condition holds for the other centers. Again when we look at the great intermediate group just west of the Mississippi river, we see a striking peculiarity in the earth-lodge, which under other circumstances would be taken as the index of a new type of culture. Recalling that one of the chief characteristics of the typical group is horse culture and that this must have arisen since 1492, it becomes probable that this group arose since that date and so suggests that some of the now intermediate tribes formerly constituted a distinct culture

center, but now obscured by disintegration. It becomes necessary, therefore, to analyze the material culture of these tribes to see if the elements of an older center can be differentiated. We have previously reviewed the place of the horse among the formative factors in Plains culture, with the result that practically all traits except those absolutely associated with the horse were formed before its introduction to the continent. On the other hand, there was good reason to believe that the stimulus of the horse did solidify and intensify the particular association of traits we now take as the type. When, however, we turn again to the earth-lodge-using tribes we find the familiar maize culture of the Southeast. The very weak development of agriculture among the Central Algonkins suggests this southern influence, but we have also the general use of the shoulder-blade hoe in apparent continuity from the Mandan to the mouth of the Mississippi, not to mention forms of the Green Corn ceremonies. The weaving of buffalo hair was quite a trait in the south, and this also we find in varying degrees among the transitional tribes. The peculiar basketry of the Arikara, Mandan, and Hidatsa in its forms, materials, and especially in its decoration suggests the cane work of the south. Fortified villages were also known on the Missouri, a prominent Southeastern trait.

Central Algonkin material traits are less obvious. We have some possible influence in matting and woven bags, also some crude attempts to make sugar of boxelder and other saps. The more northern tribes gathered some wild rice and used canoes, the birchbark culture of the north making itself felt to some extent. In costume the relation is fairly clear, for we have even today a tendency toward the styles of the Central Algonkin below the Missouri, but a tendency toward the Plains costume north of that point. The method of wearing the hair followed a like distribution; the sides of the head shaved in the south, long braids in the north. These differences again remind us of our finding a Dakota tribe to be the most typical, thus pointing toward the Dakota group as one of the originators of Plains culture.

None of these traits are, however, so significant as the earth-

lodge. Its known distribution is the Arikara, Hidatsa, Mandan, Ponca, Omaha, Pawnee, Oto, Missouri, Kansas, and Osage, upon which we have commented at length in another place. Structurally it is almost unique, but nevertheless presents some vague southern resemblances. A type of thatched house formerly used on the lower Mississippi but not fully described seems to have had a framework similar to this. Again, the method of covering with earth is found in the south, but neither of these can have much weight and leave its independent origin as probable. The grass house of the Wichita is clearly related to the southern types.[1] The dome-shaped mat and bark-covered lodge of the Algonkin was used by the Iowa and sometimes by the Osage. The Eastern Dakota made some use of a rectangular cabin apparently like some of the Sauk and Fox. All of these are intrusive types and by their presence tend to isolate the earth-lodge. Yet, the tipi was in general use and we have elsewhere noted the peculiar tendency of these tribes to live in it, at all times when not actually engaged with their fields, even in midwinter. This association between types of shelter and maize culture raises the suspicion that they may have come into the area together and so leaves us some reason to doubt the significance of the earth-lodge. The restricted distribution of the bull-boat, however, rather strengthens its claim to independent origin. We have, nevertheless, gone far enough to prove the later intermediate character of these tribes. When we note their use of the tipi, dog travois, parfleche and other rawhide work, technique of bead and quill work, weak development of textiles, large use of the buffalo, and the buffalo-hide shield, their fundamental Plains characteristics appear. These traits we have reason to believe are older than the introduction of the horse and the intensified development of the typical group. We suspect, then, the existence of an older Plains center which was strongly influenced by the Southeastern and later by the Central Algonkin centers, but nevertheless of a distinct type and probably formed before the introduction of maize culture.

In an article on the horse culture of the Plains we have cited the

[1] In this connection consult Miss Fletcher's Omaha, p. 75, for the Arikara origin of the Omaha earth-lodge.

prehistoric cultures of the tribes nearest Santa Fé, among which we can certainly place the Comanche and Kiowa, as having the basic elements of what later came to be the typical culture.[1] Our hypothesis is, that in these non-agricultural dog-using rovers after buffalo we have the outlying fringe of the older Plains culture, modified by Plateau influence, but still an indication of what prevailed at the earlier Plains center before agriculture and other foreign traits secured a footing. It was thus that the coming of the horse gave a new impetus to the Plains traits surviving among these then intermediate tribes and elevated them to the status of typical tribes. If this interpretation be correct, we have conditions similar to those in the Eastern Woodland area, the disrupting influence here being the subtle influence of intrusive native traits from the southeast and the later northward pressure of horse-using tribes. Horse culture appears here, however, as only a revivified or intensified form of the older Plains culture and so does not break the sequence of the type of this area, which demands considerable antiquity for its date of origin.

If space permitted, a somewhat similar analysis of the Eastern Woodland area could be made and likewise an archeological survey of the Ohio Valley Mound area. We have, however, gone far enough to suggest a number of problems. Needless to say the various conclusions we have offered are in no way final but merely indicate new lines of research. By our characterization of the culture areas, as sanctioned by usage, we were able to determine the approximate geographical centers in which the most highly individualized cultures existed. By viewing the distribution of culture traits from the standpoint of geographical continuity, we were able to draw some conclusion as to the directions of influence for certain traits and also to define their relation to the geographical environment. We found it at least probable that it was the environment that maintained the cultural integrity and continuity of the centers, and also was largely responsible for the lack of correlation between language, culture, and somatic type.

[1] Wissler, (*d*).

TRAIT ASSOCIATION

In this discussion we have used the term material culture without considering in what manner the traits composing it were related. The most obvious bond between them is their mere pertaining to the same political unit. In case a group of people manifests a trait, such a trait is by virtue of that relation alone an element of their culture. We characterize or determine a type of material culture by enumerating the several traits as stated at the outset; hence, unless we can find some basis for this association other than mere presence in the life of a political unit, these traits have no functional relations to each other.

Material traits are chiefly productive processes and if we take these processes in unit cycles, their relations are not difficult to comprehend. Thus, in maize culture we have the related processes of planting, tending, gathering, preserving, storing, grinding, cooking, each of which may be quite complex and all of which are dependent one upon the other. If then we note pottery as a trait, we find another cycle of processes dependent upon each other; but between the traits of pottery and maize no such dependence is apparent. We know of no good reason why maize could not be boiled in a basket, box, or bark vessel, and yet we have found the distribution of these two traits almost coincident. This coincidence therefore can scarcely be due to functional relation between the two traits. It may be accidental, but on the other hand, may have an historical explanation in that the people from whom maize culture was derived cooked in pots. The two would thus be objectively associated and might be naïvely regarded as functionally associated, or as belonging to the same unit cycle; but it is clear that one could be taken up without the other. Another interesting example has been noted among some of the tribes intermediate to the Plains center; they lived in tipis at all times, except when engaged with the production of maize, when they occupied permanent houses of a different type. Now, the house has no known functional relation to the production of maize; hence, if the tipi sufficed on one occasion, it could upon the other. Again, it could be a mere accident, but also due to the historical association of such shelters with the cultivation of maize.

Also we may cite the case of skin clothing and dog transportation whose respective distributions approximately coincide. Both seem to come from the far north where they may be observed as two of the several traits forming the Eskimo type of culture. In general, if we take up one trait after the other, in their unit cycles of processes, we find very little support for the assumption of functional relations between the various traits in a material culture; but do find suggestions of associations brought about by historical causes.[1]

Such functional independence of traits suggests the futility of all studies based upon functional assumptions, unless it be that we can show that in the long run the presence of certain traits is coincident with others. While this fundamental principle of the evolutionary school of anthropology has been generally rejected as an unwarranted assumption, it may be well to consider the possibility of mere complexity and high development in one trait being correlated with complexity and high development in others. To a certain extent this principle holds, for we do not expect very complex material developments without considerable complexity in other phases of culture; but when strictly applied to American phenomena it falls short of universality. Thus in California we have high development of basketry with great simplicity in other traits. Likewise, the use of acorns as food is in California associated with simplicity of culture, but the Iroquois[2] used acorn meal in a somewhat similar way, though, of course, they depended far less upon this food than did the Californians. On the other hand, while the Californians have specialized on vegetable foods, this aspect of their culture when considered as a whole is seemingly less complex than the vegetable food development of the Iroquois or the Pueblos. If, however, we analyze these cultures we find that the respective traits are not so much more complex as they are numerous, and that our estimate of complexity is based upon the totality of material culture as a whole and does not apply to the processes themselves. For example, the California acorn process is fully as complex as the Iroquois maple-sugar process.

[1] In this connection we may cite Tylor's discussion of "adhesions," pp. 245–270.
[2] Parker, (*a*).

Thus, we are brought to the view that the association of traits in material culture has no important intra-functional significance and that we must seek for extraneous causes to account for their observed correlations. We believe that historical explanations for such correlations will be found the most acceptable, for these do not exclude mere accident.

However, environmental causes are sometimes set up in opposition to historical causes. In the discussion of the Mackenzie, or Déné area, attention was called to the caribou and how a certain culture was found throughout the whole range of these animals from Newfoundland to Bering strait. The dependence upon them was so marked that, if other phases of culture were ignored, we should take the caribou range as one culture area. Further, this culture shows some indications of being continuous with the reindeer culture of the Old World. The analogous use of bark for vessels,[1] the bark-covered tipi of Siberia, and the remarkably tipi-like tents of Lapland and Norway may have a common origin. The tendency has been to attribute all these similarities to the Arctic environment. It seems more likely that the distribution of the allied reindeer and caribou alone has been the chief factor and that, as such, has served as a diffuser rather than a creator of various associated traits. The suggestion is that a culture having once developed around the caribou or reindeer, as the case may be, mere expansion and diffusion would tend to carry it along, thus making the animal itself the accidental carrier of the culture. The historical view conceives that the real cause for the various traits being associated lies in the fact that they were at some former time and place so associated. Traits may thus be perpetuated so long as the faunistic or other conditions permit and it may yet turn out that certain paleolithic traits of reindeer hunters in the Old World were still to be found in Canada and Siberia a few hundred years ago.

DIFFUSION OF MATERIAL TRAITS

We have vaguely touched upon the question as to the nature of diffusion in material culture. It is clear that in many cases the

[1] Boas in Teit's Shushwap, (*c*), pp. 477–487.

borrowing of traits must be specific in that the whole cycle of processes is acquired. Thus, the taking up of the horse culture trait by the Indians of the Plains was more than the mere acquisition of the animal, for it consisted of many more or less closely related processes, as the care of horses, methods of harnessing, riding, packing, etc., also all the technique of riding and packing gear. In war and hunting there were special evolutions, not to mention other non-material practices. It is conceivable that different tribes could devise quite different ways of doing these things and that they could have taken over the trait complex to varying degrees; but we find great uniformity in all respects, so great that it is clear that the complex was taken over entire. We have here a splendid example because the essential facts are accessible. About the only changes the Indian made in the European horse traits were those necessary to adapt them to the materials and other conditions of his life; for instance, we find saddles after European models, but of Indian materials. All the essential concepts and techniques, however, were given to the Indian at once, these problems having been solved in the Old World.

We have made a special study of women's dresses and men's shirts among the Plains Indians to be published elsewhere, from which it appears that a uniform technological concept complex is distributed among many tribes. Tribal individuality appears only in decoration and a few inessential features, but even so is rarely restricted to a single tribe and tends toward a geographical rather than a random grouping.

Maize, as we have noted, carried with it a considerable technique and along with it went the cultivation of beans and squashes or melons; everywhere where we have data these plants were cultivated simultaneously and quite uniform methods of cooking them in mixed dishes have been reported. The remarkable uniformity of this complex should be noted, for it is here again found in one about whose diffusion there can be no doubt.

While not all the traits are so complicated as the examples just cited, the distinctly simple ones are so rare that we may legitimately consider all traits as true complexes. In like manner we might

follow up the acorn complex of California, maple sugar, birchbark, camas, tipi, etc., each presenting its own special problems.

From these examples it appears that the tendency in material culture is not so much to profit by borrowed, disparate technological ideas as to take over whole complexes with all their concepts. This is in contrast to the observed condition in ceremonial traits as noted in the "pattern theory," or the tendency of a tribe to have a more or less fixed conception of its own according to which imported ceremonies are worked over.[1] The difference also serves to make clear that material culture is decidedly heterogeneous, or composed of disparate traits, whereas ceremonial culture is likely to be unified, or built around a fundamental idea. We see that in the main there is no evidence of functional relations between material traits or that they are controlled by any one concept. Further, in ceremonial traits the political units so far examined manifest decided individualities in their tribal pattern concepts, though the more objective aspects of the ceremonies themselves may be quite similar for all the tribes in a typical group, while in material traits such tribal individuality is wanting, so that it is doubtful if any of the political units in our centers can be truly credited with distinctive material cultures. It will be recalled that we once distinguished between these units by quantitative differences in traits rather than otherwise.[2]

Now, though material cultures taken as a whole lack tribal patterns, or individualized controlling ideas, they do tend toward specialization in the use of certain complexes, as we have noted above. In all such we have basic technological conceptions, but that such concepts dominate other technological processes is doubtful. Thus, in general literature we find the oft-repeated statement that copper is first treated as a malleable stone and so subjected to the general concepts for working stone. In a certain sense we have here a strange material subjected to a familiar technological pattern; but, if work in copper develops at all, we find it with its own distinctive cycle of processes and with its own basic conception. The

[1] Goldenweiser, p. 606.

[2] Wissler, (*a*), p. 166.

suggestion from the preceding discussion is that instances of the new application of dissociated technological ideas cannot be cited readily and, further, that when they can they will be rather the extensions of technical processes already practised by a political unit than resultants of adapting borrowed ideas.

Again we find examples like the following: In the Plains, especially in the northern half, buffalo were driven into pens or enclosures. This method was applied to antelope, also. In the Mackenzie area caribou were often driven into enclosures or through narrow lanes, which method extended even to the Eskimo of Alaska. On the east, the method was general among all the northern Algonkin tribes. It was also used in parts of the Plateau area. In this we refer to the very specific method of driving between fences into pens or lakes, for the mere process of surrounding or driving is too general to be significant. It is admissible that in the application of this process to several different species of ruminants we have a kind of pattern phenomenon, a hunting concept with continuity of distribution suggesting diffusion; but the method was nowhere exclusive and its adoption by a tribe did not require radical changes to make it conform to already established methods. Further, there are certain generalized concepts of wide application, like the pulverizing of food in mortars, which are far too fundamental for our restricted problem; but in the making of pemmican, the pulverization of dried salmon, and of dried roots in the Plateau area, we may again have the gross extension of a specific concept to new materials; but it is probable that here also we have only the application of the too generalized pulverizing concept. Anyway, the difficulty of analyzing such cases as these makes the result doubtful. Hence, it appears that the tendency in material culture is not so much to profit by borrowed ideas as to take over specific complexes: to take over one specific technological complex after the other and not to catch up from here and there disparate ideas, to be fitted into one or two unifying conceptions. This is rather in contrast to the conditions observed in ceremonial aspects of culture.

This point may be more concretely presented if we overstep the bounds of our subject and consider the forms of manufactured

objects. So far we have held strictly to the limitations of our chapter and discussed the processes of production without regard to form and decoration. It is clear, however, that the form of utensils and other manufactured objects must have an intimate association with the processes. A long time ago Holmes demonstrated the influence of materials and processes upon form and decorative designs. In some cases we have the apparent carrying over of form patterns to other classes of objects, as gourd and bark vessel forms to pottery forms, water bottle forms to baskets, etc. Boas explains the angular baskets of the Plateau center as patterned after the boxes of the North Pacific area. One reason given is that it is difficult and awkward to make a coil basket of this shape and that it must have been suggested by some other form. The correctness of this interpretation need not concern us now, since we do find among some of the Coast Salish boxes and baskets of similar forms. The Tlingit and Haida, on the other hand, used round baskets and square boxes. As already noted there is some tendency in the Southwest to the same forms for pots and baskets, but such correspondences occur in few forms only. It is possible, though not altogether probable, that the oval wooden dishes of the Eskimo are copied from Déné oval bark vessels and likewise the angular stone kettles from bark kettles. Yet, we are here dealing with one class of objects, differentiated by materials and techniques, but underlying which is one and the same vessel concept in which there is certainly a form element. As previously noted, material culture is heterogeneous and without a unifying technological concept; hence, patterns can exist only for traits based upon the same concept and even then are subordinated in detail to the nature of the materials.

In short, the "pattern theory" as applied to ceremonial traits has no similar significance in material culture; but, there are technological conceptions that prevail over considerable geographical areas and which constitute patterns of a kind, though in no case does any one of these unify the material culture of a tribe.[1] We

[1] It should be noted that we are here dealing with tribal units and contrasting their respective reactions to ceremonial and material culture traits, and not with

may conclude, then, that no significant functional connections exist among the material traits of a tribe; that between them are to be found no logical or other necessary associations, except in so far as their respective process cycles may happen to overlap, and that in consequence each trait complex presents its own distinct problem.

In this connection we find ample justification for the methods of former years according to which single complexes like fire-making, skin-dressing, basketry, etc., were taken up individually and followed over very large areas without regard to the distribution of other traits. Also it is suggested that the proper method of approach is first to analyze the complex and determine the distributions of the various unit processes. Until this is carefully done for a few typical complexes, historical, genetic, psychological or other interpretations of the phenomena cannot have firm foundations, or make substantial contributions to the development of anthropology.

MOTOR FACTORS

It is in the productive processes of material culture that we should expect to find objective signs of functional motor differences between the several groups of men, if such differences are at all significant when operating in the culture level. In any event we have a field for the development of specific problems; for example, most Indians mount the horse from the right side; some tribes coil baskets in one direction, some in the other. Have such customs a true motor basis, or are they after all susceptible of historical explanations?

First let us note the Indian method of mounting the horse. So far as we know the habit of mounting from the right side was universal west of the Mississippi and according to Adair prevailed

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culture areas. The use of common materials affords a kind of process pattern, as the use of cedar, rawhide, etc., but in so far as this is a pattern it is environmental and not a part of one tribe's individuality. The present attitude in anthropology is to consider political and linguistic differences as synonymous with culture differences. In so far as these units have patterns of their own this is justifiable, but when we take up the study of the various culture traits involved, our boundaries become geographical rather than political or linguistic. This is particularly true of material traits.

among the tribes of the Southeastern area. From observation we know that in many parts of the west and southwest when Indians drive a wagon they turn to the left in passing, which is consistent with their method of mounting, for if one mounts from the right, the leader of a span must be the right-hand horse. Now, the universality of this custom among the Indians in contrast to Americans and Englishmen calls for an interpretation. Since we know that Indians are not left-handed in general, a physiological basis for the difference seems improbable. The horse culture of the western Indians came from the Spanish settlements and the same type of culture is noted by Adair in the Southeastern area, from which it follows that the striking uniformity of Indian horse culture is most satisfactorily explained by a single point of origin for all. Hence, it seems more likely that the observed uniformity in mounting is due also to historical causes and not in any way dependent upon obscure physiological differences. This does not give a final answer to the problem, since to give it an exhaustive treatment would require both historical as well as physiological and psychological research in several parts of the world.

In the direction of movement around a basket in twining or coiling we have a process in which there are but two possibilities. If we turn a basket of these varieties upside down and look at its bottom, the spiral of the elements will run either clockwise or anti-clockwise according to how the beginning was made. Kroeber has discussed the distribution of directions for coil basketry in California, without, however, reaching any conclusion as to its significance. So far as we know, no one has investigated the direction in twine baskets, where the problem seems less complicated. The usual method of handling a twine basket, as soon as the sides have taken form, is to rest it upright on the floor or lap, or incline it with the bottom next the weaver; at least this is the position shown in such photographs as we have seen. The long standing stiff warp makes this position necessary. On *a priori* grounds the tendency will be for all right-handed persons to move in a clockwise direction. The left hand will be used to hold the wefts in place as the right passes them through. We may, there-

fore, expect practically all twine baskets made by this method to show the same direction. Mr William A. Sabine checked up twine baskets in the collections of the American Museum of Natural History—241 twine baskets were examined, distributed from Alaska to the Rio Grande, and with the exception of the Aleutians, the clockwise direction was found in all but nine baskets. The twenty-five Aleutian baskets examined were all without exception anti-clockwise. This is to be expected because the Aleutians weave their baskets suspended in an inverted position, and hence weave downward. Then if they moved in the normal order, left to right, the twining would appear anti-clockwise when the basket was turned over. According to Mason[1] and Emmons the Haida wove baskets like the Aleutians, but we had at hand no authentic specimens. The Tlingit, on the other hand, seem to have woven their baskets in the usual way as the photographs by Emmons indicate.

Tlingit baskets present one peculiarity. Many of them have one direction for the bottom and another for the sides. In this case it is clear that the direction of movement was the same for both, since the smooth finish is on the inside of the bottom and on the outside of the sides. Hence, in our reading these baskets should be classed according to the outside direction. When so taken we have a total of ninety-six in clockwise direction and eight anti-clockwise. Unless some of the latter were made by suspension, they may be considered as the work of left-handed weavers. For one of these anti-clockwise baskets we have no locality, but the others are: Sitka, four, and Hoonah, three. This suggests that at least three women made these baskets.

Among other collections we have found but one specimen in which the direction of the sides changed: viz., Yurok (50.1–5968). We also found one other left-hand basket from the Hupa (50–5978).

It is now plain that the direction of movement in twine baskets is primarily a motor phenomenon, or determined by right-handedness, the actual direction of movement in relation to the weaver being always the same. Kroeber, on the other hand, found a somewhat different condition in coil baskets.[2] The process in coil

[1] Mason, (*b*), p. 415.

[2] Kroeber, (*b*), p. 49.

is sewing rather than weaving. Here we may be sure that all right-handed women will operate the bodkin with the right hand and hold the basket with the left; but they can probably sew in either direction with equal facility. If the coil is toward the left hand, that hand will move along the rim of the basket ahead of the stitching or bodkin; but if toward the right hand, the left hand will move behind. The former will give us an anti-clockwise basket, the latter the reverse, when the bodkin is inserted from the outside of the basket. If the woman works from the inside, the directions will be reversed in our reading, but she is using her hands as before. This point is clearly shown in the plates to Mason's publication: No. 235, Pima, working from the outside, left hand ahead of stitching, basket anti-clockwise; No. 215, Hopi, ditto; No. 200, Havasupai, ditto; No. 198, Saboba, working from the outside, left hand behind stitching, basket clockwise; and No. 197, Mission, working from the inside, left hand behind, anti-clockwise.[1] The last two show the effect of changing from the inside to the outside.

Now it is clear that whether a basket is worked from the inside or out, is of little significance in determining the direction of the coil, because the woman can work right-handed and still use either of the two possible directions. Here we have a chance for tribal patterns, unless the character of the materials or some other obscure factor favor one direction.

Kroeber states that the prevailing direction in California is anti-clockwise and elsewhere clockwise.[2] Yet in California he notes that some tribes change the direction with the form of the basket. The only tribes making all their coils in the same direction for all baskets are the Pomo (anti-clockwise), the Wailaki (clockwise), and the Yuki (clockwise). The Washo use the anti-direction but all the specimens were globular, or of one shape. As against these Kroeber notes the use of both directions by the Cahuilla, Maidu, Miwok, Yokuts, Mono, Mission, and Chemehuevi.

[1] Mason, (*b*).

[2] Kroeber examined his baskets on the inside, hence we have transposed his terms to correspond with ours.

The possible explanations for the change of direction with shape, are limited. It seems unlikely that a woman would have two directions of stitching, when one would serve as well. It is almost certain that one of these directions will prevail in a tribe; hence, the most probable thing is that when baskets of both kinds occur in a tribe, in one class the bodkin is used from the outside, in the other from the inside. Since bottle-necked and many globular baskets cannot be sewed from the inside, it seems safe to assume that a tribe making these forms and using only one direction for all baskets works from the outside. Also that the direction of coil in such baskets gives us the key to tribal hand positions, where baskets vary in shape. Thus, the Pomo are certainly "left hand ahead";[1] but also are the Maidu, Miwok, and Washo; the Cahuilla, Wailaki, Yuki, Yokuts, Mono, and Mission appear as "left-hand behind."

In order to test these interpretations we examined a large series of Southwestern baskets. Here among the Apache, Pima, and Papago the bottle-necked are anti-clockwise, and flat and open-topped baskets clockwise. For the Pima and Papago we have field studies that show one prevailing tribal hand position for all baskets, left-hand ahead.

Checking up the coil baskets in the Museum, we found almost without exception all in the Eskimo, Dené, and Plateau areas to be clockwise, with no change for shape. However, except among the Eskimo and a few Dené, the wide open mouth is almost universal, permitting working from either side. Yet, in the Plateau area where imbrication is employed, the bodkin appears to have been used from the outside; hence, throughout we may expect "left-hand behind" position. In the Southwest, the position is "left-hand ahead." Thirty baskets from the cliff houses of Utah were also "left-hand ahead," all of them flat in shape and sewed from the inside. So far as this goes, the ancient and modern basketry of the Southwest is historically related.

The distributions of the two hand positions for coil basketry are now definable. From the Colorado river northward through

[1] For confirmation see Barrett, p. 161.

the interior to Alaska one position prevails, the left-hand behind, or negative relation. A few Ojibway baskets we have seen are also negative. We can extend this distribution into Siberia, but it seems to end with the Russianized natives. South of the Colorado river the tendency is emphatically toward the opposite, or positive hand relation. Our check data for California agrees in the main with Kroeber's statements. Here we find the tribes in the central part also following the positive position, but the Shoshone and Mission Indians and also the Yokuts follow the negative. We have noted that the main body of the Shoshone use the negative hand position. Thus, our negative position area reaches the coast through southern California, separating the two smaller regions for the positive position. If it were not for this change in southern California we should have one continuous positive hand position area from central California to the Rio Grande and possibly southward.[1] When we recall the Shoshone peoples predominate in southern California, the possibility of cultural intrusion from the Plateau area is suggested. The Chemehuevi, for example, seem to practise both positions, or the basket-makers are divided into two classes, some following one mode, some the other. This tendency to vary is somewhat more in evidence among the Mission Indians than elsewhere, according to our specimens. Such mixture suggests that the tribes of southern California have been subjected to two influences. Thus, our problem becomes more complicated because on general principles the cultural independence of California basketry from that of the Southwest is open to question. Here is a real problem. We have, however, gone far enough to raise a strong presumption that a historical explanation will account for the observed differences throughout. The possible exception is the case of the Wailaki and Yuki in northern California, almost isolated by the twine-weaving tribes, and according to Kroeber using the negative position. They are in contact with the twine weavers on one side and the coil on the other. Unless they work

[1] No specimens were available to us south of the Rio Grande until we reach the extreme south of South America; here thirteen baskets all ran anti-clockwise, or like the Southwest.

all their baskets from the inside, they are certainly strong claimants for independence, though some contact with the Plateaus is not entirely impossible.

In Africa we find a development of coil basketry somewhat comparable to that of America. We have not worked out the distribution so fully but find that the greater part of the Congo and South African baskets we have seen are anti-clockwise, but those from North Africa and parts of the West Coast are clockwise. Assuming that this holds for all African baskets, we have two very different races manifesting similar ranges of differences with respect to an identical motor process.

Thus, in the main, we have another example of the familiar continuity of traits, each hand position being rather definitely segregated and the whole offering an excellent opportunity to discuss the relative merits of independent invention and diffusion. Our present interest, however, is in the motor problem. In twine basketry, we saw that the direction of weave was fixed by right-handedness, and that Aleutian baskets were different from others because they were woven downward, the actual direction of movement being the same. This difference is therefore due to objective causes and not in any sense to be explained as due to motor differences in the Aleutians. In coil work, right-handedness controls the bodkin, but seemingly not the direction of movement. Some white teachers of basketry we have consulted say they teach the anti-clockwise coil because this position of the hands keeps the designs in full view. However, they believe that the sewing can be learned from one direction as easily as the other, but their experience is that when a person has learned in one of these directions, she will find it very difficult to change over to the other. Hence, we have a case in which an initial choice can be made according to objective rather than psycho-physical conditions. Yet we cannot make this conclusion positive, for many people feel that if the choice were left to the hands, the normal direction would be positive, or anti-clockwise.[1] Nevertheless, should this prove true, the adoption of another direction could scarcely be explained

[1] See also Barrett, p. 161.

on motor grounds. Thus we are dealing with cultural phenomena and not with physiological or psychological phenomena. In another place we have suggested that there were levels, or cycles, in human activities between which there were no correlations. The suggestion in this discussion is that motor differences of an individual character are not likely to produce cultural differences. Also that when a motor element does function as a culture determinant, it is likely to be a general human characteristic and neither individual nor tribal, and so cannot be considered a cause of culture differences. We are all familiar with the vague assertions in psychological and anthropological literature that knowledge of elemental psychological differences is quite essential to the investigation of culture, but so far we have not observed any successful use of such knowledge. All our own experience has indicated that culture differentiation and psychological differentiation as now understood run in relatively independent cycles.

We make no claim that this brief consideration of certain functional problems gives us final solutions, but it certainly does suggest that they are of minor importance. Everything so far seems to favor historical explanations for cultural differentiation.

SUMMARY

As stated at the outset, there has been in recent years no formative work in material culture comparable to that in art, mythology, and social and ceremonial organization. Our intent has been to show that this is in no way due to the nature of the phenomena, but that in material culture are to be found problems of the first importance. This is particularly true for North America where, so far as we now know, we deal with but one culture period comparable to the neolithic of Europe. This condition practically joins the archeological and ethnological methods, concentrating them upon a single group of problems. Nowhere else can we get so near to the objective aspects of man's entire cultural history. For some years now our dominant studies have been of a decidedly psychological character, the symbolic aspects of art, the conceptions and motives underlying the rituals of ceremonies, language, etc. All

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PHYSICAL ANTHROPOLOGY IN AMERICA

An Historical Sketch

By ALEŠ HRDLIČKA

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I—Introduction

THE term Anthropology is generally employed in this country to comprehend the entire field of researches relating to man. The present paper, however, does not aim to compass this wide range but relates exclusively to Physical Anthropology, sometimes called somatology. Geographically it is limited to the northern half of the continent and especially to that part of it under the jurisdiction of the United States, while chronologically it stops before the actual era of the science and its living representatives.

No special and comprehensive effort has hitherto been made in this direction, though as early as 1855, in his "Archæology of the United States,"[1] Samuel F. Haven gave an extended and very creditable account of the general opinions advanced to that time respecting the origin of population in the New World, and of the progress to that date of archeological and anthropological investigations in the United States. In 1898 Dr George A. Dorsey wrote the "History of the Study of Anthropology at Harvard Uni-

[1] *Smithsonian Contributions to Knowledge*, Phila., 1855, pp. 168.

versity,"[1] but he used the term "anthropology" in "its broadest, most general sense," and "somatology" received but slight mention; and in 1902 Dr George G. MacCurdy wrote on the "Teaching of Anthropology in the United States."[2] There are no other publications on the subject and the task before the writer was thus the more gratifying though also the more difficult one of research rather than of compilation.

The history of physical anthropology on this continent is relatively a brief one, dating back less than a century, yet preceding the beginnings of the same branch of science in most other countries and antedating the very use, in its modern sense, of the term anthropology. Also, though largely disconnected and individualistic, that is, represented by workers who arose quite incidentally, sometimes far apart and more or less independently of each other, it nevertheless presents a total record that is highly creditable and should be better known outside of this country.

It is almost wholly a history of anthropologists who were originally or at the same time medical men and especially anatomists or physiologists, and whose field of research was in a very large measure, though not exclusively, American. And this history is further distinguished by the fact that its beginnings, as to both time and mode, can be almost exactly determined.

II—Forerunners of American Anthropology

In a given country the history of any new branch of science would probably show, if it could be traced, a shorter or a longer preparatory period, occupied with the growth of interest in a new direction; the beginnings of collections or assembling of data; and the first efforts at lectures, writing, and association in the new field. Back of this, however, there is, as a rule, a long, unconsciously cumulative epoch, the slow preparation of the ground. The actual birth of a new science may be counted from the commencement of substantial research work in the new field, which in due time is followed by differentiation of concepts, advanced organiza-

[1] *Denison Quarterly*, Granville, O., 1888, IV, No. 2, pp. 77–97.

[2] *Science*, XV, 1902, 211–216.

tion of forces and plans, standardization of procedures, and a gradual development of regular instruction. Such was the course of physical anthropology in the United States and the rest of North America.

For the fertilization of the field in this country nothing could have been more effective than the presence on the American continent of a race whose identity, composition, and origin were problems that from the date of discovery interested the whole world, a solution of which, however, never advanced beyond a maze of hypotheses. To this, toward the beginning of the 19th century, was added the fact that the white man's contact with the Indian in North America was becoming extensive, and the need of knowing the race better, physically as well as culturally, was felt with growing intensity. Good evidence of this feeling can be seen in the excellent instruction given in 1804 by President Jefferson to Lewis and Clark, for their memorable expedition to the sources of the Missouri. Besides other things they were to look into the "moral and physical circumstances which distinguish the Indians encountered from the tribes we know";[1] and the results of this expedition helped greatly to further stimulate the universal interest in the Indian. An equally marked influence in this direction was due to a growing acquaintance with the multitude of mounds in the Ohio valley and adjoining regions on one hand, and with the Peruvian, Mexican, and Central American Indian remains on the other. Added to these factors at home came potent influences from abroad. Works on the natural history, races, and variation of man were published by Buffon, Linnæus, and Cuvier, and especially by Blumenbach[2] and Prichard.[3] In 1789 there was organized at Paris the *Musée d'Histoire naturelle*, which eventually in its scope comprised also man; in 1800 there came into existence, in Paris, the Society of Students of Man (*Société des observateurs de l'homme*), which, although short-lived, pointed to a new sphere

[1] See *History of the Expedition under the Command of Lewis and Clark*, etc., by Elliott Coues, 4 vols., N. Y. 1893.

[2] *Decades craniorum*, 1790–1828 (1873); *De generis humani*, etc., 1795 (3d ed.).

[3] *Researches into the Physical History of Mankind*, 1813 (1st ed.).

of investigations of great interest; and before many years had passed the early physiological phrenology began to call attention to the importance of the study of the skull.

As the first most tangible result of these influences in North America we see the incorporation, in 1812, at Worcester, Mass., of The American Antiquarian Society, with the chief object of "collecting and preserving the material for a study of American history and antiquities."[1] We learn that, "in the early days of the Society one of the prominent features of its work was the collection of anthropological specimens"; and we find that the first two volumes of the Transactions of this Society are devoted to the American Indian and his remains.[2]

The year 1814 marks the beginning in Boston of The Linnean Society, the predecessor of the Boston Society of Natural History (1830); but there is no evidence that the study of man derived any special stimulus through the activities of this organization. Shortly thereafter, however, a small nucleus for anthropologic research took form through the labors of Prof. John C. Warren, the eminent anatomist and surgeon and future founder of the present Warren Anatomical Museum of Harvard University. Inspired evidently by Blumenbach's works, Professor Warren began to collect and examine skulls of different races, and in 1822 he published an "Account of the Crania of some of the Aborigines of the United States,"[3] the first publication in this field on the continent. This publication, while of no permanent value scientifically, and while subscribing to the early error that the "mound-builders" were "a different people from the aborigines found here by our ancestors," is nevertheless remarkable for the systematic, technical descriptions of the specimens. In this respect it might

[1] *Transactions American Antiquarian Society*, Worcester, Mass., 1909, pp. 32.

[2] The first volume, published in 1820, contains Atwater's "Description of the antiquities of the Ohio and other historical states"; Hennepin's "Discovery of the Mississippi"; Johnston's "Indian tribes of Ohio"; and Sheldon's "Account of the Caribs of the Antilles." Vol. II, 1836, contains Gallatin's "Indian tribes of North America," and Daniel Gookin's "Historical Account of the Christian Indians of New England."

[3] Published as part H of the Appendix to his *Comparative View of the Sensorial and Nervous Systems in Man and Animals*, Boston, 1822, pp. 129–144, pls. V–VIII.

well have served as a shining example to some later writers on the same subject.

A year before the appearance of his paper on American crania Professor Warren published *A Description of an Egyptian Mummy*,[1] and an address by him on American crania, given before the British Association, is also quoted in the *Boston Medical and Surgical Journal* (XVII, 1838, pp. 249–253), but evidently his preoccupations were such that he could give the new subject relatively little attention. That he did not lose interest in the study of human crania is evident from the fact that in 1837 he engaged no less a student than Henry R. Schoolcraft to collect Indian crania for him. Owing to various difficulties, however, the gathering of the desired material was interfered with, so that the collection was restricted. The material was eventually transferred to the Warren Museum.

In the thirties collection and study of human skulls received great impetus in this country through the establishment at Boston and Washington of phrenological societies, which interested at that time many physicians and other men of science. In 1835 the Boston Phrenological Society published a catalogue of specimens belonging to the Society derived mainly from the collections "of the late Dr Spurzheim and J. D. Holm," embracing four hundred and sixteen entries, among them more than a hundred racial skulls or casts of skulls.

Such was in brief the prodromal period of physical anthropology in this country, and we can now approach its more effective beginnings.

III—The Beginnings of American Anthropology—Samuel G. Morton

Physical Anthropology in the United States, speaking strictly, begins with Samuel G. Morton, in Philadelphia, in 1830.

Morton, who was born in Philadelphia, January 26, 1799, received the degree of M.D. at the Medical College of the University of Pennsylvania in 1820 and from the Medical School of the

[1] Pamphlet 1821; and later gave "An Account of the Siamese Twin Brothers," *Amer. Med. Jour.*, Med. Sciences, V, p. 253.

University of Edinburgh three years later.[1] In 1826 he began to practise medicine in Philadelphia and soon after engaged in private instruction in medicine and anatomy. Even before this, however, he became a member of the Academy of Natural Sciences of Philadelphia, took active interest in its collections which he helped to classify and arrange, and became active in several branches of natural science, particularly paleontology. During these years, as anatomist, he also became interested, through the writings of Lawrence, Virey, Bory de St Vincent, Gall, and Combe, on the one hand, and through reading the publications of such American authors as Dr Barton, Professor Caldwell, Dr J. C. Warren, Professor Gibson, Dr B. H. Coates, and Dr M'Culloh,[2] on the other, in the rising comparative human anatomy, in phrenology (which doubtless seemed at that time a most promising branch of research), and in questions relating to the origin and racial affiliations of the American Indians.

According to J. Aitken Meigs, "craniographic" researches were begun by Morton two years after the completion of Blumenbach's *Decades craniorum*. According to Morton himself, however, the beginning of his actual work in anthropology is related to have occurred as follows:[3] "Having had occasion, in the summer of 1830, to deliver an introductory lecture to a course in Anatomy, I chose for my subject: The different forms of the skull, as exhibited in the Five Races of Men. Strange to say, I could neither buy nor borrow a cranium of each of these races; and I finished my discourse without showing either the Mongolian or the Malay. Forcibly impressed with this great deficiency in a most important branch of science, I at once resolved to make a collection for myself." The results of this resolution were that between 1830 and 1851, the latter the year of his death, Morton gathered 968 racial crania,

[1] Grant, Wm. R., *Lecture introductory to a course on Anatomy and Physiology in the Med. Dept. of Pennsylvania College, delivered October 13, 1851;* 8°, Phila., 1852, pp. 1–16. Meigs, Charles D., M.D., *A memoir of Samuel G. Morton, M.D., read Nov. 6, 1851*, published Phila., 1851, 8°, pp. 1–48.

[2] *Crania Americana*, preface, et seq.

[3] Morton, S. G., Account of a Craniological Collection, *Trans. of the Amer. Ethnolog. Soc.*, II, pp. 217–218, N. Y., 1848.

which, with 67 additional specimens that came soon after his death, constituted by far the largest and most valuable collection of anthropological materials then in existence.

With the augmentation of his collection grew evidently also Morton's interest in craniological research and in anthropology in general, leading eventually, with such additional stimuli as were furnished by the writings of Prichard, Lawrence, Humboldt, and possibly Anders Retzius, to active personal investigations in these lines. Finding a helping hand in the much interested and ingenious member of the Academy, John S. Phillips, Esq., Morton undertook the large task of measuring and describing his material, and the American collections received first attention. A very sensible schedule of measurements was formulated on the imperfect basis then extant; instruments where insufficient or lacking were improved or invented, and after "some years of toil and anxiety" sufficient data were gathered and excellent illustrations provided for an important publication.

In 1839 Morton was appointed Professor of Anatomy in Pennsylvania Medical College, and in the same year his truly monumental work for that time, *Crania Americana*, appeared, a volume not financed by any publisher or institution, but undertaken by the author with the assured support of only fifteen subscribers!

This first and largest work of Morton makes manifest some of the defects of the early period in anthropology, and it includes a chapter on phrenology, though it is the physiological phrenology of Morton's time and has no trace of the charlatanism later associated with the name; but these defects are slight when contrasted with the large bulk of astonishingly good work and the number of sound conclusions. One wonders at the nearness with which the measurements employed by Morton correspond with later and even present-day measurements in that line, and at the soberness and clear-sightedness of his deductions. As to phrenology, it is evident that Morton's interest in that branch was not that of a believer or promoter, but rather that of a friendly and hopeful investigator.[1] As to the lithographic illustrations of the work, they have not been excelled in beauty and accuracy.

[1] See prologue by John S. Phillips, Esq., in *Crania Americana*.

Morton's principal aims in preparing and publishing the *Crania Americana* were, in his own words, "to give accurate delineations of the skulls" representing as many Indian nations, from all parts of the American continent, as he could bring together in his collection; to show the position of the American crania with reference to those of other races; and to determine "by the evidence of osteological facts, whether the American aborigines of all epochs have belonged to one race or to a plurality of races." But thus early Morton gave attention also to the artificial deformation of skulls, and especially to the determination of the internal cranial capacity in various races, taking cognizance not only of the entire skull cavity but of its main subdivisions as well. Moreover, he presented, in 62 pages of his work, an excellent review of the contemporary anthropological knowledge of peoples in all parts of the world, a summary which shows good discrimination and much erudition.

The craniometric methods of Morton (and Phillips) call for special note. Not counting the more complex determinations of the facial angle and internal capacity, Morton took on each skull ten measurements, and of these the most important six were taken from precisely the same landmarks and in the same way as they are taken today under the recent Monaco agreement, though Morton was not remembered at that convention. These measurements and the manner in which they were made were, in the words of Morton[1] himself, as follows:

"The *longitudinal diameter* is measured from the most prominent part of the os frontis, between the superciliary ridges, to the extreme end of the occiput.

"The *parietal diameter* is measured between the most distant points of the parietal bones. . . .

"The *vertical diameter* is measured from the fossa between the condyles of the occiput bone,[2] to the top of the skull.

"The *occipito-frontal arch* is measured by a tape over the surface of the cranium, from the posterior margin of the foramen magnum to the suture which connects the os frontis with the bones of the nose.

"The *horizontal periphery* is measured by passing a tape around the cranium

[1] *Crania Americana*, pp. 249–250.

[2] The present *basion*.

so as to touch the os frontis immediately above the superciliary ridges, and the most prominent part of the occipital bone.

"The *zygomatic diameter* is the distance, in a right line, between the most prominent points of the zygomæ."

The terms used in describing the measurements are perhaps not as specific as those which would be employed today, nearly eight decades later, but the meaning is unmistakably identical. The four other measurements, which now are no more or but seldom employed, were the *frontal diameter*, taken between the anterior-inferior angles of the parietal bones, the *inter-mastoid arc* and *line*, and the *joint length of the face and vault.*

The *facial angle* was measured directly by an improved *facial goniometer*, while for obtaining the *internal capacity* of the skull a method was invented which, though seldom if ever duly credited, served and still serves as the basis of all subsequent procedures for obtaining this important determination with dry substances. Morton's description of the method, which deserves to be quoted in full, is as follows:[1]

"*Internal Capacity.*—An ingenious mode of taking this measurement was devised by Mr. Phillips, viz: a tin cylinder was provided about two inches and three-fourths in diameter, and two feet two inches high, standing on a foot, and banded with swelled hoops about two inches apart, and firmly soldered, to prevent accidental flattening.—A glass tube hermetically sealed at one end, was cut off so as to hold exactly five cubic inches of water by weight, at 60° Fahrenheit. A float of light wood, well varnished, two and a quarter inches in diameter, with a slender rod of the same material fixed in its centre, was dropped into the tin cylinder; then five cubic inches of water, measured in the glass tube, were poured into the cylinder, and the point at which the rod on the float stood above the top of the cylinder, was marked with the edge of a file laid across its top; and the successive graduations on the float-rod, indicating five cubic inches each, were obtained by pouring five cubic inches from the glass tube *gradatim*, and marking each rise on the float-rod. The gradations thus ascertained, were transferred to a mahogany rod fitted with a flat foot, and then subdivided, with compasses for the cubic inches and parts. In order to measure the capacity of a cranium, the foramina were first stopped with cotton, and the cavity was then filled with *white pepper seed* poured into the foramen magnum until it reached the surface, and pressed down with the finger until the skull would receive no more. The contents were then transferred to the tin cylinder, which was well shaken in order

[1] *Crania Americana*, p. 253.

to pack the seed. The mahogany rod being then dropped down with its foot resting on the seed, the capacity of the cranium in cubic inches is at once read off on it."

The most important scientific conclusion arrived at by Morton in his studies of American crania and their comparison with similar material from other parts of the world, conclusions which he held strongly to the end of his life, were (1) "That the American nations, excepting the Polar tribes (Eskimo), were of one Race and one Species, but of two great Families (Toltecan and Barbarous), which resemble each other in physical, but differ in intellectual character"; and (2) "That the cranial remains discovered in the Mounds, from Peru to Wisconsin belong to the same race (the Indian), and probably to the Toltecan family."[1] These conclusions subverted the numerous loosely formed but commonly held theories respecting the racial complexity of the American natives, and of racial separation of the "Mound-builders" from the rest of the American Indians.

Besides this, Morton's work must have proved highly useful as a contemporary compendium of anthropological knowledge; it established the main proportions of the skulls of many American tribes; it gave comparisons of skull capacity in series of skulls representing the five human races of Blumenbach's classification; it shed considerable light on the subject of artificial deformation of the head among the American natives; and it gave for the first time excellent illustrations, both plates and figures, of many American crania, which could be used in comparative work by investigators to whom original American crania were not accessible.

The few erroneous statements and conclusions included were due entirely either to imperfect contemporaneous knowledge in anthropology or to lack of material. The latter deficiency, for example, was directly responsible for Morton's opinion, supported by ten skulls which he called "Mongolian" but which were in reality only those of Chinese and Eskimo, that the American race differed essentially from all others, not excepting the Mongolian.[2]

[1] *Crania Americana*, p. 260; also p. 62 et seq.

[2] Ibid., p. 260.

The terms "Toltecan" and "Barbarous" were also, we now know, misnomers, and the classification of all the Indians into these two families was a mistake, though when it was made it served a good purpose as a basis for further investigation.

Morton intended to follow the *Crania Americana* with a "supplementary volume" in which to "extend and revise both the Anatomical and Phrenological tables, and to give basal views of at least a part of the crania delineated"; also to "measure the anterior and posterior chambers of the skull in the four exotic races of man, in order to institute a comparison between them respectively, and between these and those of the American Race."[1] This, on account of his untimely death, was never accomplished. Nevertheless the remainder of Morton's life was largely devoted to anthropology, and resulted in the publication of more than twenty papers on subjects relating in the main, but by no means exclusively, to America. The most important of these publications, and one that compares favorably in clearness of presentation and the validity and advanced nature of its conclusions with *Crania Americana*, was his *Crania Ægyptiaca*, published in 1844 and dealing with one hundred old and thirty-seven modern Egyptian skulls procured for Morton by a United States consul at Cairo, subsequently an anthropological author of note, George R. Gliddon. Without entering into details, it will be sufficient to say that Morton through his studies recognized definitely that "the valley of the Nile, both in Egypt and in Nubia, was originally peopled by a branch of the Caucasian race"; and that "the present Fellahs are the lineal and least mentioned descendants of the ancient Egyptians; the latter being collaterally represented by the Tuaregs, Kabyles, Siwahs, and other remains of the Lybian family of nations."

Of his remaining papers the more noteworthy were those on a "Method of Measuring Cranial Capacity"; "On Hybridity of Animals," etc.; on "The Size of the Brain in Various Races and Families of Man"; and on the "Physical Type of the American Indians."

Following is Morton's complete anthropologic bibliography.

[1] *Crania Americana*, preface, p. v.

Besides these works he published an excellent textbook on *Human Anatomy*.

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Skulls of New Hollanders (Australians). Proc. Acad. Nat. Sci. Phila., II, 1845, pp. 292–293.

Remarks on an Indian cranium found near Richmond, on the Delaware, and on a Chenook mummy. Proc. Acad. Nat. Sci. Phila., III, 1847, p. 330.

On an aboriginal cranium obtained by Dr Davis and Mr Squier from a mound near Chillicothe, Ohio. Proc. Acad. Nat. Sci. Phila., III, 1847, pp. 212–213.

Skeletal remains from Arica, Peru. Proc. Acad. Nat. Sci. Phila., III, 1848, pp. 39–40.

On hybridity of animals, considered in reference to the question of the unity of the human species. Proc. Acad. Nat. Sci. Phila., III, 1848, pp. 118–121.

On the position of the ear in the ancient Egyptians. Proc. Acad. Nat. Sci. Phila., III, 1848, p. 70.

The catalogue of skulls of man and the inferior animals, in the collection of Samuel G. Morton, M.D., Phila., 1849 (with two subsequent editions).

Observations on the size of the brain in various races and families of man. Proc. Acad. Nat. Sci. Phila., IV, 1850, pp. 221–224.

Four skulls of Shoshonee Indians. Proc. Acad. Nat. Sci. Phila., IV, 1850, pp. 75–76.

Ancient Peruvian crania from Pisco. Proc. Acad. Nat. Sci. Phila., IV, 1850, p. 39.

Observations of a Hottentot boy. Proc. Acad. Nat. Sci. Phila., IV, 1850, pp. 5–6.

Physical type of the American Indians. In Schoolcraft, Indian Tribes, II, Phila., 1852, pp. 316–330. Unity of the human race, ibid., III, pp. 374–375.

IV—Effects of Morton's Work

Under Morton's stimulus and with his coöperation the physical anthropology of the American Indian received attention in a number of important ethnological and archeological works published before or soon after his decease. Thus the first scientific memoir published by the Smithsonian Institution, the highly creditable Squier and Davis's "Ancient Monuments of the Mississippi Valley,"[1] included five pages of text and two excellent plates on the "Crania from the Mounds." The main part of this report was by Morton himself. One skull only is described, but it was a very good, undeformed, or but very slightly deformed specimen, derived from an ancient mound in Scioto valley, Ohio. For comparison there are given measurements of 308 mound, "tumuli," and Indian crania[2] of different ages and from different parts of the North American continent and Peru. Curiously, and against the previously expressed opinion of Morton, Squier and Davis assumed in this connection that there had existed a special "race of the mounds," the skull described "belonging incontestably to an individual of that race." Regarding skeletal remains from the mounds in general, however, they well recognized that these were "of different eras," the superficial burials being comparatively late and to be ascribed to the Indian tribes in occupancy of this country at the period of its discovery.

In the same year (1848) appeared the second volume of the *Transactions of the American Ethnological Society*, which contains important ethnological contributions and maps by Hale and Gallatin in an article on the "Indians of North America." Neither of these contributions added directly to physical anthropology, but both contained valuable data on the early distribution of the North

[1] *Smithsonian Contributions to Knowledge*, I, N. Y., 1848, pp. 288–292, pl. xlvii–xlviii.

[2] Mainly from Morton's *Crania Americana*.

American Indians, on the population of some of the tribes, and on their environment. There are notes on the physical appearance of the Indians of various types,[1] but these are quite imperfect. In the same volume also appears Morton's "Account of a craniological collection, with remarks on the classification of some families of the human race."[2] This brief contribution is interesting partly because in it Morton shows in a few words how he was led to the collection and study of American crania, and partly because he reiterates his conviction as to the racial unity of all the American nations, barring the Eskimo.[3]

Even more important than both of the works heretofore mentioned in this section was the great encyclopedia of knowledge concerning the American Indian, prepared by a special provision of the United States Congress under the auspices of the Bureau of Indian Affairs, and published between 1851 and 1857, by Henry R. Schoolcraft in collaboration with a number of other authors.[4] This work gave much reliable information on the geographic distribution of the Indian tribes in North America; on their migration; on the conditions of the Indian family, including birth and death; on the intellectual capacity of the Indian; and on the statistics and population of the tribes. Besides this, it included a series of articles dealing directly with the physical anthropology of the Indian. These comprised the "Essay on the physical characteristics of the Indian," by Samuel G. Morton (II, 315–330); "Admeasurements of the crania of the principal groups of Indians of the United States," by J. S. Phillips (II, 331–335); "Examination and distribution of the hair of the head of the North American

[1] Particularly in Hale, chapter Ethnology, pp. 5–8.

[2] Pp. 217–222.

[3] P. 218: "The anatomical facts considered in conjunction with every other species of evidence to which I have had access, lead me to regard all the American nations, except the Esquimaux, as people of one great race or group. From Cape Horn to Canada, from ocean to ocean, they present a common type of physical organization, and a not less remarkable similarity of moral and mental endowments."

[4] Complete title: *Historical and Statistical Information respecting the History, Condition and Prospects of the Indian Tribes of the United States, collected and prepared under the direction of the Bureau of Indian Affairs: per act of Congress of March 3d, 1847*, by Henry R. Schoolcraft, LL.D. 6 vols., 4°, Phila., 1851–1857.

Indian," by Peter A. Browne, LL.D. (III, 375–393); "Considerations on the distinctive characteristics of the American aboriginal tribes," by Dr Samuel Forrey (IV, 354–365); and "Unity of the human race" (373–375), "Remarks on the means of obtaining information to advance the inquiry into the physical type of the Indian" (IV, 345–353), and "The aboriginal features and physiognomy" (V, 287–292), by Schoolcraft himself.

Meanwhile also a number of publications appeared in the United States bearing on physical anthropology, which were incited not so much by Morton as by Lawrence (*Lectures on the Natural History of Man*) and especially Prichard (*Natural History of Mankind*) in England. Three volumes belonging to this category were *The Races of Man*, by Dr Charles Pickering (*Publications of the United States Exploring Expedition*, 4°, Boston, 1848); the *Natural History of Man*, by Wm. N. F. Van Amringe (8°, New York, 1848); and *The Natural History of the Human Species*, by Lieutenant Colonel Charles Hamilton Smith (8°, Boston, 1851).

These volumes, as seen in part from their titles, deal comprehensively and more or less philosophically with mankind as a whole. The two more valuable ones are those of Smith and Pickering, both presenting good summaries of contemporaneous knowledge of the subjects with which they deal. Van Amringe wrote on the basis of biblical data; nevertheless his book also contains many a good thought. The works of both Smith and Pickering were published later in new editions, the former in 1859 (Boston), with additions by Dr S. Kneeland; and the latter in 1854 (London), with *An Anatomical Synopsis of the Natural History of Man*, by Dr John Charles Hall.

The influence of these publications was more of a general nature. They were largely read, educating and influencing the public mind on a subject which was then claiming a large share of the attention of all thoughtful minds, without actually adding much to existing knowledge or stimulating intensive research.

During the latter part of the first and the early part of the second half of the 19th century there were also several other important occurrences, the results of which served to enhance interest in anthropology, particularly that of the American aborigines. These

were the numerous Government exploring expeditions to the far Northwest, West, and Southwest, under Wilkes (1838–'42), Frémont (1842–'44), Emory (1846–'47), Stansbury (1849), and others; and the extensive Pacific Railroad Surveys of 1853–'54, comprising the explorations of Parke, Whipple, Pope, Stephens, Williamson, and their companions.

V—Morton's Successors—Joseph Leidy and J. Aitken Meigs

From what precedes it is plain that Morton may be termed justly and with pride the father of American anthropology; yet it must be noted with regret that he was a father who left many friends to the science and even followers, but no real progeny, no disciples who would continue his work as their life vocation.

The collection of racial crania which Morton assembled was purchased from his executors, for the sum of $4,000, by forty-two gentlemen of Philadelphia and by them presented to The Academy of Natural Sciences of Philadelphia, where it rests a sad relic to the present day; the Academy, whether owing to lack of scholars or for other reasons, failed to provide for further research in connection with the precious material or for systematic accessions. What might not the Academy have been to American anthropology had circumstances been different! However, the time was doubtless not ripe.

As it was, two men were approached with a view to continuing Morton's work, either of whom would have made a thorough success of the undertaking had he been in a position to devote himself exclusively to anthropology. They were Joseph Leidy and J. Aitken Meigs. According to Leidy,[1] "after the death of Dr Morton, it was proposed to me to take up the investigation of the cranial characteristics of the human races, where he had left it, which I omitted, not from a want of interest in ethnographic science, but because other studies occupied my time. Having, as Curator of the Academy of Natural Sciences, the charge of Dr Morton's extensive cabinet of human crania, I confided the undertaking to Dr Meigs. . . ."

[1] In Nott and Gliddon's *Indigenous Races of the Earth*, 8°, Phila., 1857, p. xvi.

Dr J. Aitken Meigs, eventually professor of climatology, physiology, and the institutes of medicine in various colleges of Philadelphia and an indefatigable worker,[1] endeavored with considerable success to pick up the threads where broken by Morton's death and in the course of sixteen years (1850–1866) contributed a number of good papers on anthropology. The most important of these were "The Cranial Characteristics of the Races of Men," in Nott and Gliddon (1857), with extensive bibliography; the *Catalogue of Human Crania in the Collection of the Academy of Natural Sciences of Philadelphia* (1857), a continuation of Morton's Catalogue, which meanwhile had reached the third edition; the *Observations on the Occiput in Various Races* (1860); the *Hints to Craniographers* (1858), which includes the first comprehensive data on other cranial collections then in existence, both here and in Europe; and the *Mensuration of the Human Skull* (1861), which, besides referring to much of the earlier history of anthropometry, gives clear directions for 48 cranial measurements and determinations.

In appraising Meigs' anthropological work as a whole, it is felt with regret that he was not all to the science that he could and should have been. His writings show much knowledge of the field, minute application, and considerable erudition, but they do not go far enough; they are only excellent by-products of a mind preoccupied in other though more or less related directions. Meigs also like Morton left no disciples.

The bibliography of his anthropological contributions is as follows:

Description of a deformed, fragmentary human skull, found in an ancient quarry-cave at Jerusalem; with an attempt to determine by its configuration alone the ethnical type to which it belongs. Proc. Acad. Nat. Sci. Phila., XI, 1850, pp. 262–280.

On Dr Morton's collection of human crania. Proc. Acad. Nat. Sci. Phila., 1855, p. 420.

Catalogue of human crania in the collection of the Academy of Natural Sciences of Philadelphia. Proc. Acad. Nat. Sci. Phila., 1856, Suppl.

[1] Born at Philadelphia, 1829, died 1879. Biography by Geo. Hamilton in *Trans. Med. Soc. Pa.*, Phila., 1880, pp. 1–22. For other biographic notices see under Meigs in *Catalogue of the Library of the Surgeon General, U. S. A.*

The cranial characteristics of the races of men. In Nott and Gliddon's Indigenous Races of the Earth, 8°, Phila., 1857, pp. 203–352.

Hints to craniographers—upon the importance and feasibility of establishing some uniform system by which the collection and promulgation of craniological statistics, and the exchange of duplicate crania, may be provided. 8°, pp. 1–6, Phila. 1858 (?), with Proc. Acad. Nat. Sci. Phila. for 1858, and separately.

Observations upon the form of the occiput in the various races of men. Proc. Acad. Nat. Sci. Phila., XII, 1860, pp. 397–415.

The mensuration of the human skull. North-Amer. Med. Chirurg. Review, Sept., 1861, pp. 837–861.

Observations upon the cranial forms of the American aborigines, based upon specimens contained in the collection of the Academy of Natural Sciences of Phila. Proc. Acad. Nat. Sci. Phila., 1866, p. 197.

Description of a human skull in the collections of the Smithsonian Institution (from Rock Bluff, Ill.), Smithsonian Report for 1867, pp. 412–414.

Meanwhile Dr Joseph Leidy (1823–'91), later Professor of Anatomy in the University of Pennsylvania, Curator of the Academy of Natural Sciences, and a foremost naturalist, did not wholly abandon his interest in anthropology. As will be seen from the appended bibliography, he published a number of smaller contributions of more or less direct interest to the new science, all of which bear the mark of an able and conscientious observer. Among other things those of us who are more closely interested in human antiquity owe to him one of the earliest and clearest statements regarding the unreliability of the fossilization of bone as a criterion of antiquity. His words on this point are as follows:[1] "Bones of recent animals, when introduced into later deposits, may in many cases very soon assume the condition of the fossils belonging to those deposits. Fossilization, petrification, or lapidification is no positive indication of the relative age of the organic remains. . . ."

As well known, it was Professor Leidy to whom the fossil pelvic bone of Natchez and the variously petrified human bones from the west coast of Florida were submitted for examination, which resulted in the opinion that they were not necessarily of any great antiquity, though he was inclined to believe that the native American had "witnessed the declining existence of the Mastodon and

[1] In his article on human paleontology, Nott and Gliddon's *Indigenous Races of the Earth*, 1857, p. xviii, footnote.

Megalonyx" on this continent, and that man was probably a companion in America of the latest prehistoric horse.

Among the more than five hundred published contributions to natural science by Leidy, the following are of interest to anthropology:

On the cranium of a New Hollander. Journ. & Proc. Acad. Nat. Sci. Phila., 1847, p. 217.

On the hair of a Hottentot boy. Jour. & Proc. Acad. Nat. Sci. Phila., 1848, p. 7.

Observations on the existence of the intermaxillary bone in the embryo of the human subject. Proc. Acad. Nat. Sci. Phila., IV, 1848–1849, pp. 145–147.

On a so-called fossil man. Proc. Acad. Nat. Sci. Phila., 1855, p. 340.

(On human paleontology.) In Nott and Gliddon's Indigenous Races of the Earth, 8°, Phila., 1857, pp. XXI–XIX.

On an acephalous child. Proc. Acad. Nat. Sci. Phila., 1858, p. 8.

On blood crystals. Proc. Acad. Nat. Sci. Phila., 1858, Biol. 9.

On the cause of monstrosities. Proc. Acad. Nat. Sci. Phila., 1858, Biol. 9.

On sections of the human cranium. Proc. Acad. Nat. Sci. Phila., 1858, Biol. 10.

Exhibition of the lower jaw of an aged man. Proc. Acad. Nat. Sci. Phila., 1870, p. 133.

On the reversed viscera of a human subject. Proc. Acad. Nat. Sci. Phila., 1870, p. 134.

Anomalies of the human skull. Proc. Acad. Nat. Sci. Phila., 1888, p. 273.

Notice of some fossil human bones. Trans. Wagner Free Institute of Science, Phila., 1889, II, pp. 9–12.

VI—J. C. Nott and George R. Gliddon

Besides J. Aitken Meigs and Joseph Leidy, there were two other men who were closely associated with Morton in his anthropological work and who subsequently endeavored to fill at least a part of the void left by his death. They were Dr J. C. Nott, of Mobile, Alabama, and Mr George R. Gliddon of Philadelphia, formerly U. S. Consul at Cairo and a large contributor to Morton's cranial collections.

Aided in the beginning by Morton himself and supplementing their work by contributions from Agassiz, Leidy, Meigs, Usher, Patterson, and others, Nott and Gliddon published in 1854 a volume on the *Types of Mankind*, which by 1871 reached the tenth edition;

and in 1857 this was followed by a volume on the *Indigenous Races of the Earth*, which also had a large circulation.

The scope of these works, which exercised considerable influence on the public mind in the field they covered, can best be appreciated from an enumeration of their main sections, which were:

"The Types of Mankind"

Memoir of Samuel George Morton.

The natural provinces of the animal world and their relation to the different types of man, by Prof. L. Agassiz.

Geographical distribution of animals and the races of man.

Types of mankind.

Excerpts from Morton's unedited manuscripts on "The Size of the Brain in various Races and Families of Man"; and on "Origin of the Human Species."

Geology and paleontology in connection with human origins, by W. Usher, M.D.

Hybridity of animals viewed in connection with the natural history of mankind; and comparative anatomy of races, by J. C. Nott, M.D.

"Indigenous Races of the Earth"

Contribution by Leidy on "Human Paleontology"; with a letter on "Primitive Diversity of the Races of Man" and "The Reliability of Philological Evidence," by L. Agassiz.

Distribution and classification of tongues, by Alfred Maury.

Iconographic researches on human races and their art, by Francis Pulszky.

The cranial characteristics of the races of man, by J. Arthur Meigs.

Acclimation; or the comparative influence of climate and endemic and epidemic diseases on the races of man, by J. C. Nott.

The Monogenist and the Poligenist, by George R. Gliddon.

It is to be regretted that these publications and particularly the *Types of Mankind* were strongly attached to the biblical traditions, more than three hundred pages of the later volume being devoted to efforts at harmonizing the results of the rising science with the biblical Genesis.

Another serious defect of the two works was a dearth of actual field or laboratory research. They bore on the whole the stamp of popular science rather than that of reports on scientific investigation. So they were evidently received and on that basis reached their extensive circulation. They have not advanced or benefitted physical anthropology in this country to any great extent, and are now but seldom referred to.

VII—Anthropology in Boston—George Peabody and Jeffries Wyman

It now becomes necessary to leave Philadelphia for a while and return to Boston. Toward the end of the first half of the last century there were living in Salem and Boston two men, George Peabody and Jeffries Wyman, who, directly or indirectly, were destined to become important factors in American anthropology. It was the former who, after extensive travels in both North and South America, and from personal appreciation of the problems awaiting archeology, ethnology, and physical anthropology on this continent, not only assisted his friend Jeffries Wyman, but established and endowed, besides other scientific foundations, the Peabody Museum of American Archaeology and Ethnology of Harvard University (1866), an institution which from the beginning has been of highly valued service to our science.

As to Jeffries Wyman, his services to American anthropology can not be passed over with only a brief notice.

Wyman was born at Chelmsford, Massachusetts, August 11, 1814. He studied at Harvard, and in 1837 graduated in medicine. Finding difficulty in securing a favorable opportunity for practice, he became Demonstrator of Anatomy at Harvard College; but his earnings were so small that to eke out his subsistence he was obliged at the same time to become a member of the Boston fire department.[1] In 1840, however, he was appointed Curator of the Lowell Institute. In 1840–1841 he delivered at the Institute his well-known course of twelve lectures on comparative anatomy and physiology, and with the money thus earned went to Europe for further studies. At Paris he devoted himself to comparative anatomy and physiology, and here in all probability he also became acquainted more directly with the beginnings of physical anthropology. In 1843 he accepted the chair of anatomy and physiology at Hampden-Sidney College, Virginia; and in 1847 he was appointed to succeed Doctor Warren as Hersey Professor of Anatomy at Harvard College.

[1] Asa Gray: *Jeffries Wyman. Memorial Meeting of the Boston Society of Nat. History, Oct. 1, 1874*, 8°, pp. 1–37. Also Memoir of Jeffries Wyman by A. S. Packard, *Nat. Acad. Sci.*, pub. 1878, pp. 75–126.

In 1852 Jeffries Wyman began, on the occasion of a necessary trip to the South for his health, an exploration of the shell-mounds in Florida. In 1856 he penetrated deep into Surinam, and two years later traveled extensively with George A. Peabody through Argentina, across the Andes to Chile, and back by way of Peru and Panamá. In 1866, when "failing strength demanded a respite from oral teaching," he was named by George Peabody one of the seven trustees of the newly founded Peabody Museum, at the same time becoming the first Professor of American Archeology and Ethnology at Harvard University and a curator of the museum.

Long before his connection with the Peabody Museum, Wyman began to assemble collections in comparative anatomy, including some human material; and while a curator of the museum he brought together an important collection of human crania, the foundation of the present large somatological collections of that institution.

Wyman died of pulmonary hemorrhage September 4, 1874. He left no great published works, but a large number of valuable smaller contributions, many of which relate to or deal directly with anthropology. He gave us our first precise osteological knowledge of the gorilla; he investigated most conscientiously the human crania at the Peabody Museum, and extended his studies to the bones of the limbs, pointing out for the first time the prevalence of platycnemy in the Indian; he gave an excellent description of the shell-heaps of Florida and their human skeletal remains; and was at the time of his death "undisputably the leading anthropologist of America" (Packard).

That the premature demise of Jeffries Wyman was a great loss to our branch of science will be seen from the following list of publications showing his anthropological and related activities:

Observations on the external characters, habits, and organization of the *Troglodytes niger*, Geof. Boston Jour. Nat. Hist., IV, 1843–1844, pp. 362–376, 377–386.

Notice of the external characters, habits, and osteology of *Troglodytes gorilla*, a new species of ourang from the Gaboon river. Boston Jour. Nat. Hist., V, 1845–1847, pp. 417–422; Ann. Sci. Nat., XVI (Zool.), 1851, pp. 176–182; Proc. Boston Nat. Hist. Soc., II, 1845–1848, pp. 245–248; Amer. Jour. Sci., VIII, 1849, pp. 141–142.

A new species of Troglodytes. Silliman's Jour., v, 1848, pp. 106–107.

A description of two additional crania of the *engé-ena* (*Troglodytes gorilla*, Savage and Wyman) from Gaboon, Africa (1849). Proc. Boston Soc. Nat. Hist., III, 1848–51, p. 179; Amer. Jour. Sci., IX, 1850, pp. 34–45; New Phil. Journ. Edinb., XLVIII, 1850, pp. 273–286.

On the crania of Indians. Proc. Boston Soc. Nat. Hist., IV, 1851–1854, pp. 83–84.

Description of the post-mortem appearances in the case of Daniel Webster. American Jour. Med. Sci., Jan., 1853.

Dissection of a black Chimpanzee (*Troglodytes niger*). Proc. Boston Soc. Nat. Hist., v, 1854–56, pp. 274–275.

On the cancellated structure of some of the bones of the human body (1849). Jour. Boston Soc. Nat. Hist., VI, 1857, pp. 125–140.

Account of the dissection of a human foetus. Proc. Bost. Soc. Nat. Hist., Feb. 3, 1858.

Account of the collection of gorillas made by Mr Du Chaillu. Proc. Bost. Soc. Nat. Hist., Jan. 4, 1860.

On bones of a gorilla recently obtained in western equatorial Africa. Proc. Bost. Soc. Nat. Hist., Oct. 2, 1861.

Dissection of a Hottentot. Proc. Bost. Soc. Nat. Hist., April 2, 1862.

On the development of the human embryo. Proc. Bost. Soc. Nat. Hist., Dec. 3, 1862.

Observations on the cranium of a young gorilla. Proc. Boston Soc. Nat. Hist., IV, 1863, pp. 203–206.

On the skeleton of a Hottentot (1863). Proc. Bost. Soc. Nat. Hist., IX, 1865, pp. 352–357; Anthropol. Review, III, 1865, pp. 330–335.

On malformations. Proc. Bost. Soc. Nat. Hist., Oct. 19, 1864.

On Indian mounds of the Atlantic coast. Proc. Bost. Soc. Nat. Hist., Nov. 2, 1864.

On the distorted skull of a child from the Hawaiian islands. Proc. Bost. Soc. Nat. Hist., Oct. 17, 1866.

Measurements of some human crania. Proc. Bost. Soc. Nat. Hist., Nov. 20, 1867.

On symmetry and homology in limbs (1867). Proc. Bost. Soc. Nat. Hist., XI, 1868, pp. 246–278.

Observations on crania. Proc. Bost. Soc. Nat. Hist., XI, 1868, pp. 440–462. Also Observations on crania and other parts of the skeleton. Fourth Annual Report of the Peabody Museum, 1871, pp. 10–24.

On the fresh-water shell heaps of the St. John's river, East Florida. American Naturalist, II, 1869, pp. 393–403, 449–463.

Human remains in the shell heaps of the St. John's river, East Florida. Cannibalism. American Naturalist, VIII, p. 403–414, July 1, 1874; also 7th Ann. Report of Peabody Museum, I, 1874, pp. 26–37.

Remarks on cannibalism among the American aborigines. Proc. Bost. Soc. Nat. Hist., May 20, 1874.

Fresh-water shell mounds of the St. John's river, Florida; Fourth memoir. Peabody Academy of Science, Salem, Mass., 1875, pp. 94, pl. I–IX.

VIII—Later History of Anthropology

After Wyman, the history of physical anthropology in Boston, and later also in Worcester, Mass., is one that belongs, with two notable exceptions, to the realm of the living, headed by one of the best friends the science has ever had in this country, Prof. F. W. Putnam. The two exceptions apply to Henry P. Bowditch and Frank Russell.

Dr Henry P. Bowditch (1840–1911), Professor of Physiology in the Harvard Medical School, has left us, besides his physiological writings, a number of direct contributions to physical anthropology, some of which are of great value. The most noteworthy ones were those reporting his investigations on the growth of children. These investigations, undertaken in the early seventies under the auspices of the Health Department of the Social Science Association of Boston, were stimulated by the results of researches on Belgian children published in Quetelet's *Anthropometrie* (Brussels, 1870). Their final object was "to determine the rate of growth of the human race under the conditions which Boston presented." The results contributed much to our knowledge of the laws controlling the growth of the child, and stimulated in turn all later investigations on the subject in this country.

Other contributions of Professor Bowditch to anthropology are included in the following bibliography:

The growth of children. 8th Ann. Rep. State Bd. Health of Mass., Boston, 1877, pp. 1–51.

The growth of children. (A supplementary investigation) with suggestions in regard to methods of research. 10th Ann. Rep. State Bd. Health of Mass., Boston, 1879, pp. 35–62.

Relation between growth and disease. Trans. Am. Med. Asso., 1881, 9 pp.

The physique of women in Massachusetts. 21st Ann. Rep. State Board of Health of Mass., Boston, 1889–90; Also in Med. Pub. Harvard Med. Sch., 20 pp., 1 table.

The growth of children, studied by Galton's method of percentile grades. 22d Ann. Rep. State Bd. Health, Mass., Boston, 1891, pp. 479–522.

Are composite photographs typical pictures? McClure's Mag., N. Y., 1894, 331–342.

Frank Russell, Ph.D. (1868–1903), was unfortunately taken away too soon to be able to accomplish much for our branch of science. He was Instructor in Anthropology in Harvard University and was in charge of the anthropological laboratory of the Peabody Museum. In 1901 he also became associated temporarily with the Bureau of American Ethnology. He carried on explorations, partly anthropological and partly ethnological, among the tribes in northern Canada and among the Pima of Arizona, and published several contributions on craniological work in the laboratory. He succumbed to tuberculosis before his work could leave a lasting impress on American anthropology. Following is a list of his writings which bear more or less on our subject:

Explorations in the Far North, 8°, 290 pp., 1898 (expeditions under the auspices of the University of Iowa, 1892–3–4).

Human remains from the Trenton gravels. Am. Naturalist, 1899, p. 33.

Studies in cranial variation. Am. Nat., 1900, pp. 737–745.

New instrument for measuring torsion. Am. Nat., 1901, No. 412.

Laboratory outlines for use in somatology. Am. Anthropologist, v, 1901, p. 3.

Before we turn again southward, a few words are due to Canada.

In 1862 Sir Daniel Wilson (1816–1892), Professor of History and English Literature in University College, Toronto, published two volumes on *Prehistoric Man*, the second of which is devoted largely to notes and measurements, many of them original with the author, on Mound, Peruvian, Mexican, and other American crania, including a nice series (39 male, 18 female) of those of the Hurons, besides a valuable series (39 skulls) of the Eskimo. To the description of the crania is added a chapter on "Racial Cranial Distortion," and other chapters on "The Indian of the West," "Intrusive Races," and "Migrations."

Besides his *Prehistoric Man*, which reached three editions, Sir Daniel Wilson published a number of articles touching more or less directly on physical anthropology, the principal of which are:

Ethnical forms and undesigned artificial distortions of the human cranium. Canad. Jour., 1862, pp. 399–446; also sep., 8°, Toronto, 48 pp., 3 pl.

Brain-weight and size in relation to relative capacity of races. Canad. Journ., 1876, pp. 177–230; also sep., 8°, Toronto, 56 pp.

Anthropology, 8°, N. Y., 1885, 55 pp.

The right hand: left handedness. 12°, London and N. Y., 1891, x, 215 pp.

It is regrettable, from the scientific point of view, that most of these writings, while of considerable contemporary value, were somewhat general in nature, lacking in a measure the impress of the hand of the specially trained anatomist and anthropologist, hence they left no substantial, enduring impression on the progress of physical anthropology. The measurements on the crania, particularly, were few in number, recorded in inches, and taken with instruments regarding which there is no record, though presumably they were such as had been used by Meigs and Morton. The skulls utilized by Wilson were largely those of the Boston and Philadelphia collections in Quebec, and probably also from the collection now in the Provincial Museum at Toronto.

Proceeding southward from Boston and Toronto we find that, in New York, the old Ethnological Society had gone out of existence. A number of medical collections, including anthropological specimens, were being formed in connection with several of the hospitals and colleges, but resulted in nothing of importance to our science. The American Museum of Natural History was not established until 1869, and had not seriously begun its valuable collections or research in physical anthropology until well toward the end of the century.

West of New York, also, some collections of Indian crania were begun in the earlier part of the second half of the nineteenth century —particularly in Chicago, where there also appeared, between 1867 and 1873, a number of publications touching on the physical anthropology of the American race, by J. W. Foster, the geologist (1815–1873).[1] Unfortunately none of these publications, so far as they deal with somatology, are of great value.

In coming back to Philadelphia, we see that the old Wistar and Horner Museum (founded 1808) has been enriched by anthropological material;[2] and there are rising from the same medical

[1] On the Antiquity of Man in North America, *Trans. Acad. Sci.*, I, Chicago, 1867–69, pp. 227–257. On Certain Peculiarities in the Crania of the Mound-builders, *Proc. Am. Asso. Adv. Sci.*, XXI, 1872, 227–255; *American Naturalist*, VI, 1872, 738–747. *Prehistoric Races of the United States of America*, 8°, Chicago, 1873, pp. xv, 415.

[2] Destined eventually to become a part of the collections of the Wistar Institute of Anatomy and Biology, incorporated in 1892.

ranks which have already given us Morton, Meigs, and Leidy in that city, two new men who, particularly in one case, were to become of considerable importance to physical anthropology. They are Dr Harrison Allen (1841–'97), and Dr Daniel G. Brinton (1837–'99).

Dr Harrison Allen was born in Philadelphia in 18—. Like Morton he was deprived, by untoward circumstances, of preliminary higher education. In a large measure self-taught, he matriculated in 1859 in the medical department of the University of Pennsylvania and was graduated in 1861. From the latter date to 1865 he served as physician or surgeon in various city and army hospitals at Philadelphia and about Washington. At the close of 1865, resigning from the army service, he returned to Philadelphia to attend on the one hand to practice, and on the other to anatomical, anthropological, and biological investigation. Soon after he was offered the position of Professor of Zoölogy and Comparative Anatomy in the Auxiliary Faculty of Medicine in the University of Pennsylvania,[1] which he held for many years. Later he was also for a time Professor of Institutes (mainly physiology) at the University; the chair of anatomy was occupied by Leidy. In 1892 he was elected President of the Association of American Anatomists, and shortly after became the first Director of the Wistar Institute.

Judging from his anthropological writings, Harrison Allen became interested in this branch of science primarily through the works of Morton and J. Aitken Meigs, the latter of whom he knew personally; in large measure, however, he also followed the more modern English craniologists.

The number of his anthropological contributions is large, as will be seen from the appended register; but in many instances it is to be regretted that the title covers merely a note on a more or less extended oral communication, the publication of which in full would have been of much interest.

Allen's three most important contributions to physical anthropology are *The Clinical Study of the Skull* (1890); *The Crania from*

[1] *Memoir of Harrison Allen, M.D.*, by Horatio C. Wood, M.D.; read April 6, 1898; 8°, Phila. 1898, pp. 1–15. This memoir, as well as the appended bibliography, are, however, defective.

the Mounds of the St. John's River, Florida (1896); and *The Study of Hawaiian Skulls* (1898; finished just before his death). These works are accompanied by excellent illustrations; the measurements and special observations are much more detailed than in any previous American work; the whole treatment of the subjects shows much erudition; and the works compare favorably with any anthropological memoirs published to that date abroad.

The *Clinical Study of the Skull* was the tenth of the Toner Lectures of the Smithsonian Institution: lectures "instituted to encourage the discovery of new truths for the advancement of medicine." It was delivered May 29th, 1889, and printed a year later. Notwithstanding its medical title, it is strictly an anthropological publication which deals with many features and anomalies of racial skulls, that had scarcely been noticed up to that time, as will be apparent from the following subdivisions of the essay: 1, the malar bone; 2, the lower jaw; 3, the norma basilaris; 4, the basi-cranial angle; 5, the posterula; 6, the nasal chambers; 7, the vertex—its sutures, eminences, depressions, general shape, etc.; and 8, sutures other than those of the vertex.

The memoir on *Crania from the Mounds of the St. John's River* calls attention for the first time to the highly deserving series of archeological explorations, with their accompanying anthropological collections, carried on to this day by Mr Clarence B. Moore. Comparative measurements and observations are given on a considerable number of other American skulls from Alaska to California. The results of several interesting new measurements are shown; and included are reports on complete and incomplete divisions of the malar bone, on various features of the condyloid process of the lower jaw, on senile absorption, and on numerous interesting morphological characteristics of the teeth.

The final larger anthropological contribution of Harrison Allen, that on Hawaiian skulls, is really a modern production, which gives valuable detailed measurements; shows a novel method of graphic representation of the numerical data and contrast of series; and, like the works previously mentioned, includes many interesting collateral observations, such as those on prenasal fossæ, the lower

jaw, the infra-orbital suture, the hard palate, the teeth and their effect on skull form, the premature closure of sutures, and various pathological conditions.

Besides the above, there are a number of articles by Harrison Allen, the true contents of which are more or less obscured, or imperfectly expressed by their titles, and which are of considerable interest to the anthropologist. They are "The Jaw of Moulin Quignon" (1867); "Localization of Diseased Action in the Osseous System" (1870); "On Certain Peculiarities in the Construction of the Orbit" (1870); "On the Methods of Study of the Crowns of the Human Teeth" (1888); and "On the Effects of Disease and Senility in the Bones and Teeth of Mammals."

Considering the excellence of Harrison Allen's contributions to anthropology and the unquestionable fact that he, after Morton, stands as the foremost American representative of our branch of science on this continent before the end of the nineteenth century, it might seem strange that his influence on the development of the science remained only moderate. The explanation of this lies doubtless in the facts that he did not devote himself exclusively to physical anthropology, but by many was regarded rather as a biologist or anatomist; that except for the few years before his death, when he held the directorship of the Wistar Institute, he was not connected in a higher capacity with any museum or institution, and made no noteworthy collections. Also he never engaged in the teaching of anthropology; and his publications in this line, while altogether of a respectable number and volume, were nevertheless, when taken individually, often far apart, disconnected, and mostly quite brief. A list of his writings follows:

[The Third Condyle in Man.] Proc. Acad. Nat. Sci. Phila., 1867, p. 137.

The Jaw of Moulin Quignon. Dental Cosmos, IX, Phila., 1867, pp. 169–180.

On the inter-orbital space in the human skull. Proc. Acad. Nat. Sci. Phila., 1869, Biol. 13.

Localization of diseased action in the osseous system. Am. Jour. Med. Sci., 1870, pp. 401–409.

On certain peculiarities in the construction of the orbit. Am. Jour. Med. Sci., N. S., LXIX, Phila., 1870, 116–119.

Life-form in art. 4°, Phila., 1875, 70 pp.

On the effect of the bipedal position in man. Proc. Acad. Nat. Sci. Phila., 1875, pp. 468–469.

Autopsy of the Siamese Twins. Trans. Coll. Physicians Phila., VIII, Phila., 1875, pp. 21–42.

A human skull exhibiting unusual features. Proc. Acad. Nat. Sci. Phila., 1876, pp. 17–18 (Pterygo-sphenoid process).

Distinctive characters of teeth. Proc. Acad. Nat. Sci. Phila., 1878, p. 39, note.

Asymmetry of the turbinated bones in man. Proc. Acad. Nat. Sci. Phila., 1882, pp. 239–240.

Irregularities of the dental arch. Proc. Acad. Nat. Sci. Phila., 1882, p. 310.

Asymmetry of the nasal chambers without septal deviation. Arch. of Laryngol., IV, 1883, 256–257.

On the methods of study of the crowns of the human teeth, including their variations. Dental Cosmos, XXX, Phila., 1888, pp. 376–379.

On hyperostosis of the premaxillary portion of the nasal septum, etc. Medical News, LVII, Phila., 1890, pp. 183–186.

The influence exerted by the tongue on the positions of the teeth. Proc. Acad. Nat. Sci. Phila., 1891, p. 451.

On the bipartite malar in the American Indian. Proc. Asso. Am. Anatomists for 1888–1890, Wash., 1891, p. 16.

The forms of edentulous jaws in the human subject. Proc. Acad. Nat. Sci. Phila., 1893, pp. 11–13.

Congenital defects of the face. N. Y. Med. Jour., LVIII, 1893, pp. 759–760.

Hyperostosis on the inner side of the human lower jaw. Proc. Acad. Nat. Sci. Phila., 1894, pp. 182–183.

The changes which take place in the skull coincident with shortening of the face-axis. Proc. Acad. Nat. Sci. Phila., 1894, pp. 181–182.

Pithecanthropus erectus. Science, N. S., I, 1895, pp. 239–240, 299.

The classification of skulls. Science, N. S., I, 1895, p. 381.

Demonstration of skulls showing the effects of cretinism on the shape of the nasal chambers. N. Y. Med. Jour., LXI, 1895, pp. 139–140.

Note on a uniform plan of describing the human skull. Proc. Asso. Am. Anat., 8th session, 1895, pp. 65–68; also in Proc. Acad. Nat. Sci. Phila., 1896, pp. 170–174.

On the effects of disease and senility as illustrated in the bones and teeth of mammals. Science, N. S., V, 1897, pp. 289–294. German translation in *Rundschau.*

Study of skulls from the Hawaiian islands. With an introduction by D. G. Brinton. Wagner Institute. Proc. Acad. Nat. Sci. Phila., V, pp. 1–55, 12 plates, 1898.

The second student mentioned at the beginning of this section was Daniel G. Brinton. Of widely different personality from that

of Harrison Allen, his services to physical anthropology were also of quite a different character.

Doctor Brinton was graduated from Yale; he received his medical degree in 1860 at the Jefferson Medical College in Philadelphia, and had traveled in Europe. He served through the Civil War in his medical capacity, but toward the end of 1865 he returned to West Chester, thence to Philadelphia, where he practised medicine and became editor of *The Medical and Surgical Reporter*, which position he held until 1887.[1] Eventually he became Professor of Ethnology and Archeology in The Academy of Natural Sciences of Philadelphia, Professor of American Linguistics and Archeology in the University of Pennsylvania, and Curator of the American Philosophical Society collections.

Brinton's interest in anthropology dated probably from his childhood, and extended to all branches of the science, including somatology. Like Harrison Allen, he came but little in direct contact with the American tribes, in whom nevertheless all his interests centered; but unlike Allen he was much more a student than a laboratory man or a practical anatomist. Allen and Brinton associated, however, as friends, and each doubtless exercised an influence on the other's thought and scientific production.

Among the numerous publications of Brinton relating to anthropological subjects, more than thirty are of more or less direct interest to physical anthropology (see appended bibliography). Of these the large majority are of a documentary or general nature, the more noteworthy being *The Floridian Peninsula* (1859); *The Mound-builders* (1881); *Races and Peoples* (1890); and *The American Race* (1891). Among his special articles, those deserving more particular notice, are that on "Anthropology, as a Science and as a Branch of University Education in the United States" (1892); "On Certain Indian Skulls from Burial Mounds in Missouri" (1892); "On the Variations of the Human Skeleton and other Causes" (1894); "On the Aims of Anthropology" (1895); and "On the Factors of Heredity and Environment" (1898).

[1] For further details see *Report of the Brinton Memorial meeting*, 8°, Phila., 1900, pp. 67.

In glancing over these publications the student of physical anthropology will find many useful data and much that is helpful; but here and there he will also come across a bowlder in the path which it will be necessary to remove and the traces of which in some cases will long be perceptible. Among the most helpful were Brinton's articles on the mound-builders, counteracting the old prevalent opinion that there had existed a separate mound-builder race distinct from the rest of the Indians. Among his opinions which it would be hard to accept today were that the Eskimo extended far to the south of their present eastern abode; the probability of the derivation of the American race at the close of the last glacial epoch from Europe; and his correspondingly antagonistic attitude toward the theory of Asiatic derivation of the Indians.

Doctor Brinton excelled as a critic and in discussion; and notwithstanding a lack of sufficient specialization in physical anthropology, his activities exercised a favorable influence on the progress of the science in common with other branches of anthropology. Dr Brinton's bibliography relating more or less to somatology follows:

The Floridian peninsula, its literary history, Indian tribes and antiquities. 8°, pp. 202, Philadelphia, 1859.

The Shawnees and their migrations. Historical Magazine, x, pp. 1–4, Jan., 1866 (Morrisania, New York).

The Mound-builders of the Mississippi valley. Historical Magazine, xi, pp. 33–37, Feb., 1866.

The probable nationality of the mound-builders. American Antiquarian, iv, pp. 9–18, Oct., 1881.

Anthropology and ethnology. pp. 184. Iconographic Encyclopedia, i, pp. 1–184, Phila., 1886.

A review of the data for the study of the prehistoric chronology of America. Pp. 21. Proc. Amer. Assoc. for the Advancement of Science, 1887.

On an ancient human footprint from Nicaragua. Proc. Amer. Philos. Soc., xxiv, pp. 437–444, Nov., 1887.

On a limonite human vertebra from Florida. Proc. Amer. Assoc. Adv. Sci., 1888.

On the alleged Mongoloid affinities of the American race. Proc. Amer. Asso. Adv. Sci., xxvii, p. 325, 1888.

The cradle of the Semites. A paper read before the Philadelphia Oriental Club. Pp. 26, Phila., 1890.

Races and peoples; Lectures on the science of ethnography. 12°, N.Y., 1890, 313 pp., 5 maps.

Essays of an Americanist. I, Ethnologic and Archaeologic. Illus., 8°, Phila., 1890.

Folk-lore of the bones. Jour. Amer. Folk-lore, III, pp. 17–22, Jan. 1890.

The American race: A linguistic classification and the ethnographic description of the native tribes of North and South America. Pp. 392. New York, 1891.

Current notes on anthropology. Science, New York, 1892.

Anthropology as a science and as a branch of university education in the United States. Pp. 15. Phila., 1892.

The nomenclature and teaching of anthropology. American Anthropologist, V, pp. 263–271, July, 1892.

Remarks on certain Indian skulls from burial mounds in Missouri, Illinois and Wisconsin. Trans. of the Coll. of Physicians, Phila., third series, XIV, pp. 217–219, Nov., 1892.

European origin of the white race. Science, XIX, p. 360, June, 1892.

Proposed classification and international nomenclature of the anthropologic sciences. Proc. Amer. Assoc. Adv. Sci., XLI, pp. 257–258, 1892.

The African race in America. Chambers' Cyclopedia, new edition, VII, London and Phila., 1893, pp. 428–430. Article "Negroes."

The beginnings of man and the age of the race. The Forum, XVI, pp. 452–458, December, 1893.

Variations of the human skeleton and their causes. Amer. Anthropologist, VII, pp. 377–386, Oct., 1894.

On various supposed relations between the American and Asian races. Memoirs of the International Congress of Anthropology, Chicago, 1894, pp. 145–151.

The "nation" as an element in anthropology. Memoirs of the International Congress of Anthropology, Chicago, 1894, pp. 19–34.

The aims of anthropology. Proc. Amer. Assoc. Adv. Sci., XLIV, pp. 1–17, 1895.

Left-handedness in North American aboriginal art. Amer. Anthropologist, IX, pp. 175–181, May, 1896.

The relations of race and culture to degenerations of the reproductive organs and functions in women. Medical News, N. Y., Jan. 18, 1896, pp. 68–69.

On the remains of foreigners discovered in Egypt by Mr. Flinders Petrie, 1895. Proc. Amer. Philosophical Soc., XXXV, pp. 63–64, Jan., 1896.

Dr Allen's contributions to anthropology. Proc. Acad. Nat. Sci. Phila., December, 1897, pp. 522–529.

The factors of heredity and environment in man. Amer. Anthropologist, XI, pp. 271–277, September, 1898.

The dwarf tribe of the upper Amazon. Amer. Anthropologist, XI, pp. 277–279, Sept., 1898.

The Peoples of the Philippines. Amer. Anthropologist, XI, pp. 293–307, Oct., 1898.

IX—History of Anthropology in Washington

Again leaving Philadelphia, further tracing of the earlier history of physical anthropology in the English speaking countries of this continent leads us to Washington and to the various Government exploring expeditions, to certain corporate bodies associated with the United States Government, and finally to Government institutions proper.

The earliest event of importance to physical anthropology in Washington of which any records exist, was the gathering of Indian and other crania made by the United States Exploring Expedition of 1838–1842. No concrete record seems to exist showing exactly what this collection comprised. It was deposited with the National Institute (1840–1862), a society with a strong Government affiliation. In 1841 this society was granted the use of quarters in the Patent Office building for its collections, and those of the Government were confined to its care; and in these, we are told, natural history and ethnology predominated.[1] According to a catalogue of the collections of the National Institute, by Alfred Hunter (second edition, 1855), the anthropological material in the Institute at that time comprised an "Ancient skull"; "A very superior collection of human crania, many of them collected by the United States Exploring Expedition from the Pacific Islands"; "A skull from the Columbia river"; "Skull of a Chenook Chief"; four skulls "from an ancient cemetery"; a "Mummy from Oregon"; "Two tatooed heads from Fiji"; "Peruvian mummies"; "Two Egyptian mummies"; "The skull and paws of a chimpanzee"; and numerous busts in plaster of distinguished persons. These collections remained in the Patent Office in part until 1858 and in part until 1862, when they were transferred to the Smithsonian Institution.

The Smithsonian Institution was established in 1846, under the terms of the will of James Smithson, who bequeathed his fortune in 1826 to the United States for the "increase and diffusion of knowledge among men."[2] From the income of the fund the present

[1] See Richard Rathbun: The National Gallery of Art, *Bull. 70, U. S. National Museum*, Wash., 1909, p. 25 et seq.

[2] *The Smithsonian Institution, at Washington*, etc., Washington, 1907; also, *The Smithsonian Institution; documents relative to its origin and history*, by Wm. J. Rhees, Washington, 1879, pp. 1027.

Smithsonian building was erected on land given by the United States, and on its completion in 1858 a large part of the collections assembled under the auspices of the Government up to that time were assigned to the custody of the Institution. The National Institute passed out of existence in 1862.

In 1863 the Smithsonian Institution collections were partly destroyed by fire,[1] but the anthropological part fortunately escaped.

In 1866 another establishment was founded in Washington which was destined to render a great service to physical anthropology. This was the Army Medical Museum. Almost from the first close relations were established with the Smithsonian Institution, involving exchange of specimens; and on January 16, 1869, a formal arrangement was entered into between Secretary Henry, for the Smithsonian Institution, and Dr George A. Otis, curator of the Army Medical Museum, for the transfer thenceforth from that Museum to the Smithsonian Institution of all ethnological and archeological articles that were then in the Medical Museum or might be received in the future, in return for which the Museum received and was to receive thenceforth all human skeletal material. The actual number of crania then transferred does not appear in the records, but the collection must already have been of some importance; and in the following years hundreds of specimens of similar nature were received by the Museum from the Smithsonian. In addition, letters and circulars were sent out by Doctor Otis to Army and Navy surgeons as well as to other persons, and through this medium the Army Medical Museum anthropological collections grew until, in 1873, they included approximately sixteen hundred crania of American aborigines and other races.[2]

About 1870, or shortly after, a series of measurements were undertaken on the crania in the Army Medical Museum collection under Doctor Otis's direction; and in 1876 and again in 1880 a "Check-List" was published by Doctor Otis, the later edition including records on more than two thousand human crania and skeletons

[1] See *Annual Report of the Smithsonian Institution*, 1864, p. 117, et seq.

[2] A detailed account of the services of the Army Medical Museum to American anthropology is being prepared by Dr D. S. Lamb of the Museum.

from many parts of the world. Unfortunately the majority of the measurements were made by an unscientific employee and with instruments less perfect than those now in anthropometric use, with the consequence that many of the determinations have since been found by remeasurement of the specimens to be more or less inaccurate, and the catalogue on that account can not be used with any degree of confidence.

After Doctor Otis's death in 1881 the anthropological studies suffered a temporary set-back, but were stimulated again in 1884 when Dr J. S. Billings, U. S. Army, became Curator of the Museum. As a result of Doctor Billings' interest in anthropological work it was taken up by another United States army surgeon, namely Dr Washington Matthews.

Before this, however, two important publications of much direct interest to physical anthropology were made possible by investigations conducted in connection with the United States Army and were published in New York and Washington. The first was Dr B. A. Gould's, *The Military and Anthropological Statistics of the War of the Rebellion*, 8°, New York, 1865; the second was *Statistics, Medical and Anthropological, of the Provost-marshal-general's Bureau*, two volumes, 4°, 1875.

Both of these works deal with statistical data and observations obtained on Northern recruits during the Civil War, and represent the first efforts of note on this continent in anthropology of the living, the records extending to many thousands of subjects. The data were secured by medical examiners and other physicians. Unfortunately the work was carried out under unfavorable circumstances, and by men many of whom had no previous knowledge of these matters and who received no instruction except by circulars. The records in consequence, while interesting, can not be regarded as sufficiently reliable for the present demands of anthropology. In a number of instances, as in the reports on certain physiological observations on the "Indians" enlisted in the army, the results, in view of our subsequent information on these subjects, are so inaccurate as to be quite useless.

Dr Washington Matthews (1843–1905), to whom we may now

return, while known to science mainly for his contributions to Hidatsa and Navaho ethnology, was nevertheless interested considerably and directly in physical anthropology. In the Army Medical Museum, and in part with Doctor Billings, he carried on and published the results of investigations on the measurement of the cranial capacity, on composite photography and appliances for the same, on several modifications of anthropometric instruments, and on anatomical and anthropological characteristics of Indian crania, particularly those of the ancient Pueblos collected by the Hemenway Expedition.

The Hemenway Expedition was fitted out in 1886 under the direction of Frank Hamilton Cushing, with funds supplied by Mrs Mary Hemenway of Boston, for exploring certain ruins of the Gila drainage in Arizona. While the work was fairly under way, Dr J. L. Wortman, at that time the anatomist of the Army Medical Museum, visited the excavations in the Salt River valley at the instance of Mr Cushing and Dr Matthews, and obtained a large collection of the fragile skeletal remains of the ancient Pueblos, which was forwarded to the Museum. Here they were eventually studied by Matthews and Wortman and the results were published in a quarto memoir[1] which forms a contribution of lasting value to physical anthropology and a worthy companion to Allen's *Crania of the St. John's River*.

Doctor Matthews, a personal friend of the writer, was interested in physical anthropology to the close of his life; but advancing illness obliged him for several years before his death to abandon active work in that direction. Shortly before his death he was partly instrumental in the final stage of retransfer of the anthropological collections from the Army Medical Museum to the Smithsonian Institution; and he left hundreds of drawings and records on parts of these collections. Doctor Matthews' contributions to physical anthropology were as follows:[2]

[1] The human bones of the Hemenway collection in the U. S. Army Medical Museum at Washington, by Dr Washington Matthews, surgeon U. S. Army; "with observations on the Hyoid bones of this collection, by Dr J .L. Wortman. *Seventh Memoir of the National Academy of Sciences*, Washington, 1891, pp. 141–286, plates 1–59.

[2] For other publications and a biographical sketch, see Mooney, J., in *American Anthropologist*, N. S., VII, no. 3, 1905, pp. 514–523.

The curvature of the skull. Trans. Anthr. Soc. Wash., III, pp. 171–172, Wash., 1885.

On composite photography as applied to craniology, by J. S. Billings; and on measuring the cubic capacity of skulls, by Washington Matthews. Read April 22, 1885. Mem. Nat. Acad. Sci., III, pt. 2, 13th mem., pp. 103–116, 19 pl., Wash., 1886.

On a new craniophore for use in making composite photographs of skulls, by John S. Billings and Washington Matthews. Read Nov. 12, 1885. Mem. Nat. Acad. Sci., III, pt. 2, 14th mem., pp. 117–119, 4 pl., Wash., 1886.

Apparatus for tracing orthogonal projections of the skull in the U. S. Army Medical Museum. J. Anat. and Physiol., XXI, pp. 43–45, 1 pl., Edinb., 1886.

An apparatus for determining the angle of torsion of the humerus. J. Anat. and Physiol., XXI, p. 43–45, 1 pl., Edinb., 1886.

The study of consumption among the Indians. N. Y. Med. Jour., July 30, 1887.

A further contribution to the study of consumption among the Indians. Trans. Am. Climatol. Assoc., Washington meeting, Sept. 18–20, 1888, p. 136–155, Phila., 1888.

The Inca bone and kindred formations among the ancient Arizonians. Am. Anthropologist, II, pp. 337–345, Wash., Oct., 1889.

Human bones of the Hemenway collection in the U. S. Army Medical Museum. Mem. Nat. Acad. Sci., VI, 7th mem., pp. 139–286, 57 pl., Wash., 1893.

Use of rubber bags in gauging cranial capacity. Am. Anthropologist, XI, pp. 171–176, Wash., June, 1898.

We may now return to the Smithsonian Institution. While conditions during a larger part of the second half of the 19th century were not propitious for active participation by the Institution in anthropological research, nevertheless its publications, as will be seen from the bibliography, included many anthropological contributions by writers both foreign and American.

In 1872 Professor Otis T. Mason became connected with the Institution as collaborator in ethnology.

In 1879, the collections of the Institution increasing, Congress authorized the erection of a separate building for the National Museum, which was completed in 1881. In 1884 Professor Mason became curator of the Department of Ethnology in the Museum, and for almost a quarter of a century he was active in this position with abundant results.[1]

[1] See Otis Tufton Mason, by Walter Hough, *American Anthropologist*, X, 1908, pp. 661–667.

While above all an ethnologist (in the American sense of the word), and while from a deep religious sentiment rather averse to the doctrine of man's evolution, Professor Mason was nevertheless one of the warmest friends of physical anthropology; and his helpful hand was in no small measure responsible for the subsequent auspicious development of the Division of Physical Anthropology in the U. S. National Museum.

Furthermore, somatology benefitted also directly from Professor Mason's scientific contributions. After Squier[1] and Fletcher,[2] he described one of the earliest known examples of Peruvian trephining;[3] he had printed for distribution the best contemporaneous classification of the human races; and several of his papers,[4] with his very useful annual contribution to anthropological bibliography, were of real service to our science. He was one of the founders (1879) and for a long time one of the most active members of the Anthropological Society of Washington; and his beneficial, stimulating effect on all branches of anthropology was felt at many a meeting of Section H of the American Association.

Among other friends of anthropology in connection with the Smithsonian Institution, now deceased, it is necessary to mention Dr J. M. Toner and Thomas Wilson.

By the generous endowment of Doctor Toner there were delivered under the auspices of the Institution, between 1873 and 1889, a series of lectures on medical and related topics which included two of special interest to physical anthropology, namely, "The Dual Character of the Brain," by Dr C. E. Brown-Séquard;[5]

[1] Squier, *Peru*, N. Y., 1877.

[2] Fletcher, On prehistoric trephining and cranial amulets, *Contributions to N. A. Ethnology*, vol. VI.

[3] The Chaclacayo trephined skull; with measurements by Dr Irwin C. Rosse, U. S. A., *Proc. U. S. National Museum*, 1885, pp. 410–412, pl. 22, and list of measurements (appended).

[4] *What is Anthropology?* A Saturday lecture delivered in the U. S. National Museum, March, 1882, 21 pp. The scope and value of anthropological studies, *Proc. A. A. A. S.*, 1884, 365–383. The relation of the mound builders to the historic Indians, *Science*, 1884, III, 658–659. Indians in the U. S., June 30, 1886, *Rep. U. S. Nat. Mus.*, 1885, 902–907. Migration and the food quest: A study in the peopling of America, *Smithsonian Rep.*, 1894, 523–539, map.

[5] Delivered Apr. 22, 1874, published in *Smithsonian Misc. Coll.*, Jan., 1877.

and "The Clinical Study of the Skull," by Dr Harrison Allen.[1] Doctor Toner was also one of the founders of the Anthropological Society of Washington.

Thomas Wilson (1832–1902), previously for several years United States Consul to Ghent, Nantes, and Nice, became attached to the National Museum in 1887 as curator of the Division of Prehistoric Anthropology.[2] While abroad, and particularly in France, he became deeply interested in archeological matters and especially in the remains of early man, subjects which occupied his attention throughout the period of his connection with the Museum. Collaterally he was, however, interested in physical anthropology, and a number of his papers deal with matters relating to that science. It is to be regretted that they were not specific enough to be of lasting value.

His publications of interest to physical anthropology are: "A study of prehistoric anthropology" (*Annual Report U. S. National Museum*, 1888); "Man in North America during the Paleolithic period" (ibid.); "Anthropology at the Paris Exposition" (ibid., 1890); and "The Antiquity of the red race in America" (ibid., 1895).

By 1897 the collections of the United States National Museum had grown to such an extent that a new plan of organization of its departments became necessary. By this plan three large departments were established—Anthropology (in the broader sense of the term), Biology, and Geology, and Professor W. H. Holmes was appointed head curator of the Department of Anthropology, which was subdivided into eight sections.[3] Prof. O. T. Mason remained as curator of ethnology, later serving for several years as acting head curator.

It was Prof. W. H. Holmes, fortunately still living and in full vigor, who conceived the need of and eventually succeeded in adding to his department the Division of Physical Anthropology, the first regular division devoted entirely to this branch of science on this

[1] See Allen's bibliography, page 536 of this article.

[2] See In Memoriam: Thomas Wilson, by O. T. Mason, *American Anthropologist*, IV, April–June, 1902.

[3] See *Report U. S. National Museum for 1897*, Washington, 1899, p. 6, et seq.

continent. With this end in view and at Professor Holmes' suggestion, an arrangement was made with the Army Medical Museum whereby a larger part of the normal somatological material in that institution (approximately two thousand crania) was transferred to the National Museum in 1898–1899. The division came into actual existence in 1902, in charge of the writer; in 1904 another highly valuable instalment of anthropological material (approximately fifteen hundred crania and skeletons) was transferred to the division from the Army Medical Museum, the latter retaining only specimens of pathological or surgical interest; and subsequently, by coöperation with other institutions and through the help of many friends of the Smithsonian, as well as through field exploration and laboratory work, the collections have increased until today they consist of more than 11,000 racial crania and skeletons, 1,600 human and animal brains, and thousands of photographs, casts, and other objects relating to physical anthropology.

In touching on the development of the Division of Physical Anthropology in the National Museum we have passed by a collateral event of much importance, namely, the establishment, in connection with the Smithsonian Institution, of the Bureau of American Ethnology.

In 1879 the Bureau of American Ethnology was definitely organized and placed by Congress under the supervision of the Smithsonian Institution.[1] Several years before this, however, Major Powell, as Director of the Geographical and Geological Survey of the Rocky Mountain Region, began the publication of a series of important volumes called *Contributions to North American Ethnology*, and it was the preparation of these which may really be looked upon as the beginning of the Bureau's existence. Major Powell himself had accomplished important work among the tribes of the Rio Colorado drainage in connection with his geological and geographical researches, and he logically became the first director of the Bureau when separately established.

The Bureau of American Ethnology has not directly occupied

[1] *Handbook of American Indians North of Mexico*, Washington, 1912, I, (4th impression), p. 171 et seq.

itself with somatology; but from the beginning of the important explorations carried on under its auspices the collection of skeletal remains of the American Indians was encouraged, and an important part of the present collections in physical anthropology in the U. S. National Museum proceeded from such field work. Besides this the publications of the Bureau were from the first open to our branch of science, with the result that at this time they contain a respectable number of more or less direct contributions to the subject, and physical anthropology in this country derived much encouragement from this most deserving institution.

Among the members of the Bureau, not now living, several deserve special mention for their services to our branch of science. These are J. C. Pilling, whose bibliographies are of assistance; Dr W. J. Hoffman, who was interested directly in somatology, reporting, among other writings. on "The Chaco Cranium"[1] and on the Menomini Indians;[2] Cyrus Thomas, who during his exploration of the mounds collected many crania now part of our collections; and W J McGee, who contributed to our knowledge of the Sioux and Seri Indians, and gave us, with Muñiz, a fine memoir on Primitive Trephining in Peru.[3]

Papers published by the Smithsonian Institution and its branches relating more or less directly to physical anthropology, and excluding those of living authors, are the following:[4]

1851. Culbertson, T. A. Indian tribes of the upper Missouri. S.R., v.
1852. Stanley, J. M. Catalogue of portraits of North American Indians, and sketches of scenery, etc. S.R., vi.
1855. Letterman, J. Sketch of the Navajo Indians. S.R., x.
1856. Haven, Samuel F. Archeology of the U. S., or Sketches, Historical and

[1] *Tenth Ann. Report of the U. S. Geol. and Geogr. Survey, of the Terr. for 1876*, Wash., 1878, pp. 453–457, 2 pl.

[2] *Fourteenth Ann. Report Bureau Amer. Ethnology.*

[3] The Seri Indians, *17th Ann. Rep. B. A. E.* With M. A. Muñiz, Primitive Trephining in Peru, *16th Ann. Report B. A. E.*

[4] Abbreviations: S. R., Annual Report of the Smithsonian Institution; S. C., Smithsonian Contributions to Knowledge; S. M., Smithsonian Miscellaneous Collections; P. N. M., Proceedings United States National Museum; B. N. M., Bulletin United States National Museum; R. N. M., Annual Report United States National Museum; C. E., Contributions to North American Ethnology; R. B. E., Annual Report Bureau American Ethnology; B. B. E., Bulletin Bureau American Ethnology,

Bibliographical, of the Progress of information and opinion respecting vestiges of antiquity in the United States. S.R., VIII.

1859. Retzius, A. Present state of ethnology in relation to the form of the human skull. S.R.

1860. Morgan, Lewis H. Circular in reference to the degrees of relationship among different nations. S.M., II.

1861. Morgan, L. H. Suggestions relative to an ethnological map of North America.

1862. Stanley, J. M. Catalogue of portraits of North American Indians. S.M., II.

1862. Reid, A. Skulls and mummy from Patagonia. S.R.

1862. Gibbs, G. Ethnological map of the United States. S.R.

1862. Wilson, D. Lectures on physical ethnology. S.R.

1862. Morlot, A. Lecture on the study of high antiquity. S.R.

1862. Quatrefages, A. de. Memoir of Isidore Geoffrey St. Hilaire. S.R.

1862. Reid, A. Human remains from Patagonia. S.R.

1864. Baegert, Jacob. Aboriginal inhabitants of the California peninsula. S.R.

1864. Dean, John. The gray substance of the medulla oblongata and trapezium. S.C., XVI.

1864. Troyon, Fred. On the crania helvetica. S.R.

1864. Gibbs, G. The intermixture of races. S.R.

1864. Morlot, A. The study of high antiquity in Europe. S.R.

1865. Petitot, E. Account of the Indians of British America. S.R.

1866. Gibbs, G. Notes on the Tinneh or Chepewyan Indians of British and Russian America. S.R.

1866. Von Hellwald, F. The American migration; with notes by Prof. Henry. S.R.

1866. Scherzer; Schwarz. Table of anthropological measurements. S.R.

1867. Darwin, C. Queries about expression for anthropological inquiry. S.R.

1867. Pettigrew, J. B. Man as the contemporary of the mammoth and reindeer in middle Europe. S.R.

1867. Meigs, J. A. Description of a human skull from Rock Bluff, Ill. S.R.

1867. Smart, C. Notes on the Tonto Apaches. S.R.

1867. List of photographic portraits of North American Indians in the gallery of the Smithsonian Institution. S.M., XIV.

1868. Broca, P. History of the transactions of the Anthropological Society of Paris, from 1865 to 1867. S.R.

1870. Swan, James G. The Indians of Cape Flattery. S.C. XVI.

1870. Gardner, W. H. Ethnology of the Indians of the valley of the Red River of the North. S.R.

1870. Blyden, E. D. On mixed races in Liberia. S.R.

1871. Grossmann, F. E. Pima Indians of Arizona. S.R.

1872. Broca, P. The troglodytes, or cave dwellers, of the valley of the Vezère. S.R.

1873. Mailly, E. Estimate of the population of the world. S.R.
1873. Gillman, H. The mound-builders and platycnemism in Michigan. S.R.
1874. Mailly, E. Eulogy on Quetelet. S.R.
1874. Schumacher, P. Ancient graves and shell-heaps of California. S.R.
1874. Farquharson, R. J. A study of skulls and long bones, from mounds near Albany, Ill. S.R.
1874. Tiffany, A. S. The shell-bed skull. S.R.
1876. De Candolle, A. Probable future of the human race. S.R.
1876. Gillman, H. Characteristics pertaining to ancient man in Michigan. S.R.
1876. Swan, J. G. Haidah Indians of Queen Charlotte's islands, British Columbia. S.C., XXI.
1876. Brackett, A. G. The Sioux or Dakota Indians. S.R.
1876. Jones, Joseph. Explorations of the aboriginal remains of Tennessee. S.C., XXII.
1877. Galt, F. L. The Indians of Peru. S.C.
1877. Gibbs, George. Tribes of western Washington and northwestern Oregon. C.E., I.
1877. Dall, W. H. Tribes of the extreme Northwest. C.E., I.
1877. Brown-Séquard, C. E. Dual character of the brain. S.M., XV.
1878. Hart, J. N. de. The mounds and osteology of the mound builders of Wisconsin. S.R.
1878. Dall, W. H. On the remains of later pre-historic man. S.C., XXII.
1879. Pratt, R. H. Catalogue of casts taken by Clark Mills, Esq., of the heads of sixty-four Indian prisoners of various western tribes, and held at Fort Marion, St. Augustine, Fla., I.
1879. Havard, V. The French half breeds of the Northwest. S.R.
1880. Mason, Otis T. Record of recent progress in science. Anthropology. S.R.
1881. Powell, J. W. On limitations to the use of some anthropologic data. R.B.E., I.
1881. Mason, Otis T. Anthropological investigations.
1881. Index to anthropological articles in publications of the Smithsonian Institution. George H. Boehmer.
1881. Mason, O. T. Anthropology. (Bibliography of anthropology; abstracts of anthropological correspondence.) S.R.
1882. Fletcher, R. Prehistoric trephining and cranial amulets. C.E., V.
1882. Rau. Charles. Articles on anthropological subjects contributed to the Annual Reports of the Smithsonian Institution from 1863 to 1877, pp. 180.
1885. Donaldson, Thomas. The George Catlin Gallery in the U. S. National Museum, with memoirs and statistics. R.N.M., I.
1886. Mason, Otis T. The Chaclacayo trephined skull. R.N.M.
1887. Thomas, C. Burial mounds of the northern sections of the United States. R.B.E., V.

1887. Porter, J. H. Notes on the artificial deformation of children among savages and civilized peoples. S.R.; R.N.M.
1887. MacCauley, Clay. The Seminole Indians of Florida. R.B.E., v.
1888. Results of an inquiry as to the existence of man in North America during the paleolithic period of the Stone Age. R.N.M.
1888. Niblack, Albert P. The coast Indians of southern Alaska and northern British Columbia. R.N.M.
1888. Wilson, Thomas. A study of prehistoric anthropology: Handbook for beginners. R.N.M.
1890. Evans, John. Antiquity of man. S.R.
1890. Hitchcock, Romyn. The Ainos of Yezo, Japan. R.N.M.
1890. Wilson, Thomas. Criminal anthropology. S.R.
1890. Hitchcock, Romyn. The ancient pit-dwellers of Yezo. R.N.M.
1890. Wilson, Thomas. Anthropology at the Paris Exposition in 1889. R.N.M.
1890. Romanes, George J. Weismann's theory of heredity. S.R.
1891. Thomas, Cyrus. Catalogue of prehistoric works east of the Rocky Mountains. B.B.E., 12.
1893. Rockhill, William Woodville. Notes on the ethnology of Tibet.
1895. Wilson, Thomas. The antiquity of the red race in America. R.N.M.
1895. Hamy, E. T. The yellow races. S.R.
1896. Hoffman, Walter James. The Menomini Indians. R.B.E., XIV.
1897. McGee, W J. The Siouan Indians. R.B.E., XV.
1897. Muñiz, M. A., *and* McGee, W J. Primitive trephining in Peru. R.B.E., XVI.
1898. McGee, W J. The Seri Indians. R.B.E., XVII.
1898. Haeckel, Ernst. On our present knowledge of the origin of man. S.R.
1902. Gaudry, Albert. The Baoussé-Roussé explorations: Study of a new human type, by M. Verneau. S.R.

X—Conclusion

The preceding notes close a rapid and doubtless imperfect survey of the history of physical anthropology among the English-speaking people of northern America, so far as connected with those no longer living. Interdigitating closely with the more recent chapters of this history is the unfinished, richer, and more organized portion which rests in the hands of those who are still active.

Looking backward into this history, we see on the whole very creditable, though more or less sporadic and irregular, beginnings, and an irregular, often defective, course, yet not without lasting results. The more recent period belongs only to the development proper of the branch—development now based on great and accur-

ately identified collections, nourished by advancing systematic training and regulation of methods, definitely conscious of the immense and complex field of research ahead, and confident that in coöperation with closely allied branches of science physical anthropology is destined to serve worthily these countries and humanity in general.

The influences on and direct participation in American anthropology of various scientific societies and journals, and of foreign men of science, have been mentioned only casually and must be left for a future paper. Suffice it to say here that the foremost among our societies whose activities favored the advance of physical anthropology were the Anthropological Society of Washington (1879–); the American Ethnological Society of New York (1842–; 1899–); the Boston Society of Natural History (1830–); the American Association for the Advancement of Science, Section *H* (1882–); and the American Anthropological Association (1902–). Among journals especial credit is due to the *American Naturalist* (1867–); to *Science* (1880–), and above all to the *American Anthropologist* (1888–), besides which there are the periodical publications of the Smithsonian Institution and its branches, the Reports of the Commissioner of Indian Affairs, the publications of the Peabody Museum of American Archaeology and Ethnology, and those of The Academy of Natural Sciences of Philadelphia, the American Museum of Natural History, and other institutions, which include numerous contributions to physical anthropology. As to foreign men of science who have most influenced the progress of our science in America, the list includes Blumenbach, Gall, Prichard, Lawrence, Anders Retzius, Broca, Quatrefages, Hamy, Topinard, Barnard Davis, Flower, Kollmann, E. Schmidt, and Rudolph Virchow. Finally, there are also a number of additional American names connected with isolated publications or noteworthy collections pertaining to physical anthropology, which will deserve a more extended reference in some future publication on this subject. They include men like Emil Bessels, known for his contributions on Eskimo crania[1] and

[1] Einige Worte uber die Inuit (Eskimo) des Smith-Sundes, nebst Bemerkungen über Inuit-Schädel, *Archiv für Anthropologie*, VIII, 1875–1876, pp. 107–122.

"The Human Remains found among the Ancient Ruins of Southwestern Colorado and Northern New Mexico";[1] H. Gillman, who wrote on crania and platycnemism in Michigan;[2] Dr George W. Peckham, to whom we owe a contribution on "The Growth of Children" of Milwaukee;[3] David Boyle who in the "Archaeological Reports" of the Province of Ontario reported on Indian crania; Cordelia A. Studley, who wrote on "Human Remains from the Caves of Coahuila, Mexico";[4] Paul Schumacher, to whom we owe the large collections of California crania now in the Peabody Museum at Cambridge and the U. S. National Museum; and Ad. F. Bandelier, who collected a large amount of skeletal material in Bolivia for the American Museum of Natural History.

Writings on physical anthropology in Mexico and the countries to the south, if we exclude those of the living, are very meager. Lund's contributions in Brazil and Ameghino's in Argentina have been dealt with in another place.[5] In Peru a collection of crania had been made by Raimondi; the foreign contributions to Peruvian anthropology are given in the writer's reports on that country.[6] In Mexico, if we exclude what has been done relatively recently by a few living workers, we have little to mention except the contributions of Morton, and those by two or three French authors;[7] the history of anthropology in that country, however, is now receiving the attention of Dr Nicolas León.

UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

[1] *Bulletin U. S. Geological and Geographical Survey*, II, 1876.

[2] See the bibliography of the Smithsonian Institution, p. 549 of this paper.

[3] *6th Annual Report State Bd. of Health of Wisconsin.*

[4] *Sixteenth Report Peabody Museum*, Cambridge.

[5] Early Man in South America, *Bull. 52, B.A.E.*

[6] *Smithsonian Misc. Coll.*, 1911 and 1913.

[7] E. T. Hamy, *Mission scientifique du Mexique. Anthropologie*, Paris, 1891. Also Quatrefages and Hamy, *Crania Ethnica*,

THE PRESENT CONDITION OF OUR KNOWLEDGE OF NORTH AMERICAN LANGUAGES

By PLINY EARLE GODDARD

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Introduction

THE attention given the languages of America since its discovery has resulted from several interests. Missionary spirit was the first of these in point of time and one of the most important in results. A number of individuals of various sects and nationalities realized that it is necessary in order to reach and influence the native mind to have a common language as a means of communication. Racial conceit usually prevents a people generally from acquiring the language of its would-be teachers. The really effective missionaries are those who apply themselves to the study of the native language in question with sufficient earnestness to be able not only to speak it fluently, but to think in it and to construct words and phrases capable of conveying new ideas. We are interested at the present moment only in the by-products of such endeavors—the numerous dictionaries and grammars written by these missionaries to aid themselves and

others in acquiring a mastery of the languages needed in the work of propaganda.

One of the best known and one of the first missionary students of an American language was John Eliot, who, beginning in 1632, was pastor of a church at Roxbury, Massachusetts, for fifty-seven years. During this time he acquired the language of the neighboring Indians, an Algonkian tongue, made a translation of various parts and finally of the whole Bible, and published an essay on the grammar.[1] The people for whom he labored have passed out of existence, but his work is treasured as an example of printing and is of real value as a record of the language formerly spoken in eastern Massachusetts.

Of much greater importance from a linguistic standpoint, is the work of Stephen R. Riggs, who, with his wife Mary, went to the Eastern Sioux in 1837. During many years among these Indians he acquired their language, translated the entire Bible, and published a grammar and dictionary. As a result of his labor and that of his descendants the Sioux generally have learned to write and read their own language. The elderly men are now able to write highly interesting and important accounts of their former life and ceremonies in the Dakota language.

Similar practical results in teaching Indians to write and read their own languages resulted from the invention by Rev. James Evans (1801–46) of a system of syllabic characters which much reduces the effort necessary in such undertakings. By means of these characters the Bible and much other religious literature has been issued in Cree, for which language they were first devised, and in Ojibway and other Algonkian languages of Canada. With certain modifications these characters have been used also for the Athapascan languages of the north and for Eskimo.

Of these northern missionaries, those who have contributed most abundantly to our linguistic knowledge, are: Father A. Lacombe, who issued a grammar and dictionary of Cree in 1874, still the best source of information for that language;[2] Father Émile

[1] Eliot, (*a*), (*b*).

[2] Lacombe.

Petitot, who issued, besides other works of literary and scientific interest, a large comparative dictionary of the Mackenzie River Athapascan languages;[1] and Father A. G. Morice who has published numerous papers of particular and comparative interest on the Athapascan languages of the north.[2]

Linguistic work stimulated largely by missionary motives is still in progress. Father Julius Jetté, stationed on the Yukon, has published texts of the Ten'a,[3] and Rev. J. W. Chapman, lower on the same river, has issued this year a volume of texts in the related Athapascan[4] dialect. In Arizona, the Franciscan Fathers of St Michaels have made an exhaustive lexical study of the Navaho language which they have published in the form of a dictionary.[5]

The scientific interest aroused in Europe by the discovery that Sanscrit is genetically related to Greek and Latin was soon communicated to the New World. Before this discovery, it had been generally assumed that Hebrew was the first language to be spoken and the one from which all other languages were descended. The new view of the world languages falling into related groups stirred to activity some of the foremost scholars of Europe. Philology took its place with science and literature as a subject of the highest intellectual importance.

The publication of *Mithridates* in 1816 by Adelung and Vater was the first attempt to present a comparative view of the languages of the world.[6] Included in this work is a discussion of a considerable number of American languages. In America the interest developed at two definite points. P. S. Duponceau, a Frenchman, who had transferred his activities from our war for independence to political life, was associated with Jefferson and Franklin in the American Philosophical Society of Philadelphia. Among the documents gathered relating to the Indians of the vicinity was the manuscript

[1] Petitot, (*a*), (*b*), (*c*).
[2] Morice, (*a*), (*b*).
[3] Jetté.
[4] Chapman.
[5] Franciscan Fathers, (*a*), (*b*).
[6] Adelung and Vater.

grammar of Delaware by David Zeisberger in German. Duponceau undertook its translation and became very much impressed with the beautiful organization of the language.[1] He was led by his interest to some comparative observations on the languages of America in general. His studies were stimulated by the work of Adelung and Vater which became accessible to him at this time and by the linguistic works of Wilhelm von Humboldt.

Albert Gallatin, who had been a teacher of languages in his youth, became interested in the languages of America through Alexander von Humboldt, whom it is probable he met when Humboldt was returning from his epoch-making journey through Spanish America. Gallatin, through the Secretary of War, in 1826, sent out a circular containing a list of words, the equivalents of which in the various Indian languages were desired for comparative study. In 1826, the material gathered by Mr Gallatin was used for publication by Adrien Balbi in France.[2] This publication attracted the attention of the officers of the American Antiquarian Society of Worcester, Mass., and they invited Mr Gallatin to publish his material in full in the *Transactions* of their society. This is the first comparative treatment of the languages of North America.[3] It is accompanied by a map showing the distribution of the Indians according to tribes and linguistic grouping. Considering the small amount of material at the time available, Mr Gallatin's conclusions are sound and accurate. He organized and became the first president of the American Ethnological Society in 1842. His interest in the subject continued until his death.

Horatio Hale, at the time a young man, was the ethnologist of the United States Exploring Expedition (1838–1842) under the command of Charles Wilkes. The seventh volume of the publications of this expedition was devoted to ethnology and philology. The greater portion of the work is concerned with the islands of the Pacific, but the native languages of the western coast of North America are comparatively treated. Under the editorship of

[1] Duponceau, (*a*), (*b*).

[2] Balbi.

[3] Gallatin, (*a*).

Gallatin the material gathered by Hale was published in the *Transactions* of the American Ethnological Society, Vol. 2.

Soon after, George Gibbs became interested in ethnology and linguistics. He visited California as ethnologist with an expedition made by Col. M'Kee. This material was published by Schoolcraft who was associated with the Bureau of Indian Affairs in the gathering and publication of information relating to the Indians.

Vocabularies were generally gathered by engineering or other government parties engaged in the new west as occasion offered. Of especial importance are those secured by A. W. Whipple and others in 1853–4, edited by W. W. Turner. Dr Washington Matthews, a surgeon in the U. S. Army stationed in the west, devoted himself to linguistic studies. He prepared a grammar of the Hidatsa language which was published by the government in 1877, following a Grammar and Dictionary published by John Gilmary Shea in 1873. Dr D. G. Brinton, who became professor of American linguistics and archeology at the University of Pennsylvania in 1886, added much to the interest in and discussion of American linguistic problems. He was the first man to hold a chair in an American institution devoted to the study of American languages.

In 1879 the Bureau of American Ethnology was established under the Smithsonian Institution. Major Powell, whose interest in ethnology had been aroused while conducting exploration work for the Geological Survey of the Rocky Mountain Region, was the first head of the Bureau.

The seventh annual report of this Bureau, issued in 1891, contains a classification of the Indians north of Mexico according to linguistic families. In the preparation of this paper Major Powell was assisted in the linguistic comparisons by two men of unusual linguistic ability and equipment, Albert S. Gatschet and J. Owen Dorsey. The publication of this paper marks the end of the first period of scientific linguistic work in America. With the exception of the work of Duponceau and Gallatin, it was stimulated largely by comparative interest. It was considered sufficient to gather selected word lists and make a comparison of the vocabularies so

obtained. By the means of these lists, first Gallatin and later Powell were able to determine the linguistic grouping according to lexical or genetic relationship. For this purpose the methods employed seem to have been fairly adequate. The work of Gallatin has stood except where he lacked even word lists of sufficient extent, or where his praiseworthy caution prevented the grouping of languages which he felt morally certain belonged together. The linguistic families of Powell remain largely undisturbed. His caution separated the Shoshonean language from Nahuatl on the basis of the material at hand.

The two men mentioned above as contributing to Powell's classification inaugurated the second period of linguistic work stimulated by scientific interest rather than missionary zeal in North America. Until their time the chief purpose had been to secure sufficient material to determine to which large group each language belonged. The new interest was two-fold: a psychological interest in the languages themselves, a desire to know what ideas were expressed and what was the mental classification applied to these ideas by the particular people as evidenced by their language; and a historical interest in the changes that had taken place in a single language or in the various languages belonging to one family. Both of these interests have readily lent themselves to wider comparative ones, but it has generally been comparison with linguistic knowledge itself as the main motive rather than a search for a convenient means of grouping people or a means of tracing migrations that has distinguished this second period of study.

The new purposes required more abundant material and more accurate recording of it. J. Owen Dorsey recorded and published texts of native tales and myths from several of the Siouan-speaking tribes. From these texts and from grammatical material secured from the speakers of these languages, Mr Dorsey secured an excellent conception of the general structure of the Siouan languages and of their mutual relationships. Albert S. Gatschet recorded and published a number of texts in the language of the Klamath Indians of Oregon, together with a grammar and dictionary. He also recorded texts and vocabularies of many languages which were

deposited in the Bureau of Ethnology at Washington and still remain unpublished.

Franz Boas, who had spent several seasons with the Eskimo and the Indians on the North Pacific coast, joined the staff of the American Museum of Natural History in 1895. The wide interests of Professor Boas had included the languages of the natives among whom he had worked. Through the research work of the Museum and his contact with the students of anthropology at Columbia University, Professor Boas soon dominated the linguistic work in North America. Largely under his direction and stimulation thousands of pages of texts of Indian languages have been gathered and published. Analytical studies of a large number of these languages have been made and uniform grammatical sketches published. The personal linguistic interest of Professor Boas is primarily psychological, but the historical and comparative aspects have not been neglected.

Of the considerable number of the younger men who have been engaged in the work only a few have had special training in the scientific study of Indo-Germanic or other linguistic families of the Old World. Recently Prof. C. C. Uhlenbeck, who has made a name for himself in Sanscrit and Indo-Germanic philology, has undertaken the study of American languages. Dr J. P. B. de Josselin de Jong has spent two summers studying Algonkian dialects.

Extinct Stocks

Of the fifty-six or more linguistic stocks in existence north of Mexico when the continent was being colonized only eight appear to have become totally extinct. In every case some material of value is extant. It is truly fortunate that in the great decrease of native population in certain regions, such as the eastern portion of the United States and in Oregon and California, a larger number of stocks have not disappeared.

Atakapan. The Atakapa of southwestern Louisiana formerly spoke two dialects which, as far as is known, were all that belonged to this stock. The statement of Dr John Sibley that the Karankawa of Texas spoke the same or a similar language has been proven

incorrect.[1] There remains a vocabulary recorded by Martin Duralde in 1802, 145 words of which were published by Gallatin,[2] and 54 words, apparently selected from the former list, in the *Transactions* of the American Ethnological Society.[3] Doctor Gatschet visited the Atakapa in 1885 and secured a text and other material making a total of about 2,000 words. This material is in the Bureau of American Ethnology and has never been published. When Doctor Gatschet visited the Atakapa he found and heard of nine individuals. It is not likely that any now exist who speak the language consecutively although there are a few who remember many words.

Beothukan. This extinct linguistic stock, formerly spoken in Newfoundland, is known by three vocabularies furnishing altogether 480 words. Dr John Clinch secured a vocabulary, probably from John August, a Beothuk, some time between 1783 and 1788. Rev. John Leigh recorded a vocabulary from a captive Beothuk woman, called Mary March (her native name was Demasduit) in 1819, of 180 words. W. E. Cormack obtained a vocabulary from a Beothuk woman living in his family called Nancy (native name Shanandithit). These are published with discussions by Gatschet in the *Proceedings* of the American Philosophical Society.[4] Latham was convinced the Beothuk were "a separate section of the Algonkins," but Gatschet with better material pronounced them distinct.

Nothing had been known of living Beothuk since 1827 until in 1912 Doctor Speck found a part-blood Beothuk woman among the Micmac of Nova Scotia. He obtained from her a short vocabulary.[5]

Coahuiltecan. This stock, now probably extinct, is discussed by Dr Gatschet under the name Paikawa.[6] It was formerly represented by several dialects spoken on either side of the lower Rio Grande. There is a catechism in one of these dialects by Bartholome García published in 1760. Dr Gatschet was able in 1886 to collect con-

[1] Sibley.
[2] Gallatin, (*a*), pp. 307–367.
[3] Gallatin, (*b*), pp. 95–97.
[4] Gatschet, (*l*), (*m*), (*p*).
[5] Speck, (*c*).
[6] Gatschet, (*t*), p. 38.

siderable material of the Comecrudo and Cotoname dialects amounting to about 1,000 words besides phrases and one extremely short text. A few scattered words were recovered from mission records by Prof. H. E. Bolton.

Esselenian. The remains of the only language belonging to this stock are scanty. Esselen seems to have been spoken along the coast of California northward from the Santa Lucia mountains nearly to Monterey bay. There are about two hundred separate words included in a total of three hundred words and phrases. Two short vocabularies were recorded long ago: one of twenty-two words by Jean F. G. de la Pérouse in 1786, and one of thirty-one words by Dionisio Alcala Galiano in 1792. Later, Duflot de Mofras gave a set of numerals, and Arroyo de la Cuesta fifty words and phrases. Mr H. W. Henshaw secured one hundred and ten words and sixty-eight phrases in 1888. Dr A. L. Kroeber has brought all the available material together and published it with a discussion of the phonetics and grammar.[1]

Karankawa. The Karankawa lived on the coast of Texas,—those of whom we have linguistic material near Matagorda bay. Doctor Gatschet[2] in 1884 was able to secure twenty-five words from an o'd man and an old woman, both Tonkawa who had lived with Karankawa mates. In 1888, through Prof. F. W. Putnam, Doctor Gatschet learned of a white woman, Mrs Alice W. Oliver, who had lived near the Karankawa and learned to speak the language fairly well. Doctor Gatschet secured from her about 150 words. These vocabularies, with analysis and discussion, Gatschet published in *Peabody Museum Archaeological and Ethnological Papers*,[3] pp. 69–167. The Karankawa have been extinct since the middle of the nineteenth century.

Siuslaw. Two closely related dialects, formerly spoken on the Lower Umpqua and Siuslaw rivers, Oregon, were considered to belong to the Yakonan stock until in 1910 Dr Leo J. Frachtenberg, while collecting additional material, concluded that they form an

[1] Kroeber, (*a*), 49–68.
[2] Gatschet, (*t*), pp. 69–167.
[3] Gatschet (*o*).

independent stock. Vocabularies of both dialects were recorded by Doctor Gatschet in 1884. Smaller ones had been collected by Doctor Milhau and Mr Bissell in 1881. These vocabularies remain unpublished in the Bureau of American Ethnology. Doctor Frachtenberg secured a good-sized vocabulary, grammatical notes, and a few texts of the Lower Umpqua dialect. The texts have been published [1] and a grammatical sketch, now in press, will appear in Part 2, Bulletin 40, Bureau of American Ethnology. Doctor Frachtenberg's informant was an old woman who was not accustomed to the use of her own language. The stock is now extinct.

Timucuan. This language was formerly spoken by a group of tribes in northern Florida. They were the first natives within the present boundaries of the United States to come in contact with Europeans. Our linguistic sources are the writings of two missionaries, Francisco Pareja who was with them from 1594 to 1610, and Gregorio de Mouilla. Their church literature contains abundant and excellent text material which was studied and selections published by Gatschet in the *Proceedings* of the American Philosophical Society.[2] At that time his *Arte de la Lengua Timuquana* was not available. It has since been reprinted (1886). These people either ceased to exist or to speak the language soon after 1821. There is some indication of relationship to Muskhogean, but Doctor Swanton, who makes this statement, is not yet ready to give a final opinion.

Waiilatpuan. Two tribes of Oregon spoke dialects rather remotely connected, which, taken together, make up the linguistic stock known as Waiilatpuan. The Cayuse lived on the headwaters of the Walla Walla, Umatilla, and Grande Ronde rivers. They have been extinct for fifty years. The Molala lived between Mt Hood and Mt Scott. Doctor Frachtenberg secured in 1910 from the last person speaking this dialect an extensive vocabulary, grammatical notes, and more than thirty texts. This material, now in manuscript and the property of the Bureau of American Ethnology,

[1] Frachtenberg (*e*).
[2] Gatschet, (*w*), (*d*).
[3] Pareja.

it is expected will be published as a bulletin of that Bureau. The only other material known to be in existence is a vocabulary of Cayuse secured by Hale.[1]

Nearly Extinct Stocks

In addition to the seven linguistic stocks which are totally extinct, there are nine each of which is spoken by a few individuals only, no one of whom is able to furnish material of great extent or value. Of none of these languages do we have ample or satisfactory recorded material.

Chimariko (Chimarikan of Powers). The Chimariko lived on the main Trinity river south of the mouth of South fork as far as Taylor's flat, California. Stephen Powers recorded a vocabulary of about 200 words in 1875, which he published.[2] Jeremiah Curtin is said to have secured a good vocabulary in 1889. After attempts by Kroeber and Goddard attended with but slight success, Dr Roland B. Dixon visited the surviving Chimariko in 1906 and secured texts which, with translations and notes, cover twenty printed pages. Doctor Dixon obtained other valuable material in the form of lists of words and phrases. This material, with analysis and discussion, has been published.[3] It is the opinion of Doctor Dixon that Chimariko is related to Shasta.

Chitimachan. This is the language of a single tribe, the Chitimacha of southern Louisiana. According to the last census there are 69 persons of Chitimacha blood. Most of them have employed French patois as a means of communication even among themselves for many years. The first published linguistic material known is a vocabulary furnished by Martin Duralde, but probably recorded by Murray about the beginning of the nineteenth century. This vocabulary was included by Gallatin in his comparative list.[4] Doctor Gatschet visited the Chitimacha in 1881–2 and secured considerable linguistic material, including some texts. Only a few words of this have been published.[5] Doctor Swanton worked with

[1] Gallatin, (*b*), pp. 97–98.
[2] Powell, (*a*), pp. 474–477.
[3] Dixon, (*c*).
[4] Gallatin, (*a*), pp. 303–367.
[7] Gatschet, (*j*).

the Chitimacha in 1907 and 1908, and secured additional texts which have not yet been published. He has also carefully revised the material secured by Doctor Gatschet.

Chumashan. The Chumashan dialects, formerly spoken on the Santa Barbara islands and adjacent coast of California, are generally known by the names of the five missions with which the speakers were afterward connected. Of these dialects there are vocabularies collected by various individuals which Doctor Kroeber has brought together and published with similar material obtained by himself.[1] Some grammatical material gathered by the same author from Indians still speaking the Santa Ynez dialect appears in an earlier volume of the same series.[2]

Costanoan. This name is given to the dialects formerly spoken on the coast of California from the Golden Gate southward to Monterey. Gatschet and others have considered these dialects related to those of the Moquelumnan stock (Miwok) and have called the combined stock Mutsun.[3] Powell separated them in 1891 on the advice of Curtin.[4] We have a grammar of the Costanoan by Father Felipe Arroyo de la Cuesta, published in 1861.[5] Doctor Kroeber has a short grammatical sketch and a text of one of the dialects.[6] Grammatical notes of two other dialects, short texts, and comparative vocabularies are published by the same author in the same series.[7] The probable relationship to Miwok is discussed in the latter paper.

Salinan. There are two known dialects of Salinan, those of two missions, San Antonio and San Miguel, on the coast of California. Of the San Antonio dialect there is a vocabulary recorded by Father Buenaventura Sitjar, published by Shea, vol. VII, *Library of American Linguistics*, and a vocabulary of the San Miguel dialect recorded by Hale.[8] Doctor Kroeber secured some

[1] Kroeber, (*j*).
[2] Kroeber, (*a*), pp. 31–43.
[3] Gatschet, (*b*), pp. 157–8.
[4] Powell, (*c*).
[5] de la Cuesta.
[6] Kroeber, (*a*), pp. 69–80.
[7] Kroeber, (*j*), pp. 239–263.
[8] Gallatin, (*b*). p. 126.

words of the latter dialect at Jolon, in 1901–2. These, with grammatical notes and comparative vocabularies, have been published.[1]

Shastan (Sastean of Powell). The Shastan stock, as formerly known, was believed to have occupied the Klamath river valley above Happy Camp, California, and to have extended somewhat into Oregon. Doctor Dixon[2] has traced the stock to the Rogue river valley, Oregon, to Salmon and New rivers, California, and to the head of the Sacramento river. With the Shasta he has combined the Achomawi, the Palaihnihan of Powell,—a combination favored by Gatschet. The languages making up the new group differ considerably from each other. A vocabulary of the Shasta recorded by Hale is reprinted with others from Lieuts. Ross, Crook, and Hazen;[3] and there is also one from Powers.[4] Considerable linguistic material, collected by Doctor Dixon, has not yet been published.

Tonkawan. The Tonkawa, who alone constitute the stock bearing their name, lived in southwestern Texas. There are at present forty-two of them on a reservation in Oklahoma. Oscar Loew in 1872 secured a vocabulary which Gatschet published in *Zwölf Sprachen aus dem Sudwesten Nordamerikas*,[5] together with a vocabulary furnished by von Rupprecht. Altogether these make three hundred words and some phrases. Doctor Gatschet discussed the Tonkawa on the basis of this material in *Die Sprache der Tonkawas*.[6] Subsequently Doctor Gatschet himself collected a vocabulary of upward of a thousand words and about fifty pages of texts, now in the keeping of the Bureau of American Ethnology.

Tunican. This language was spoken on each side of the Mississippi river near the mouth of the Yazoo river. There is no published Tunican linguistic material. They were visited in 1886 by Gatschet who obtained a considerable vocabulary and concluded that the language was an independent one. Doctor Swanton visited

[1] Kroeber, (*a*), pp. 43–47.
[2] Dixon, (*a*, *b*).
[3] Gallatin, (*b*), p. 98.
[4] Powell, (*a*).
[5] Gatschet, (*a*).
[6] Gatschet, (*c*), pp. 64–73; (*x*), p. 318.

the Tunica (of whom 43 remain according to the census of 1910) in 1907 and secured additional material which will be published together with that of Gatschet. Swanton[1] thinks there is good reason to suppose that Koroa, Yazoo, Tioux, and Grigra, now extinct at least in language, were related to the Tunica of whom they were neighbors.

Yakonan. Two dialects, Yaquina and Alsea spoken in western Oregon within the territory covered by the present county of Lincoln, since the separation of two dialects to make the new Siuslaw stock, comprise the Yakonan stock. The Yaquina dialect is no longer spoken and there are only three who are still able to speak Alsea. J. Owen Dorsey recorded vocabularies of both dialects in 1884. Dr Livingston Farrand secured a vocabulary and five texts of Alsea in 1901. Doctor Frachtenberg recorded about twenty texts of Alsea and grammatical notes in 1910. The texts will probably be published as a bulletin of the Bureau of American Ethnology.

Stocks Satisfactorily Studied

There are seven of the linguistic stocks which have already received such study as to remove them from the list of those demanding immediate attention. These stocks, it is needless to say, are among the less extended ones, represented by one or two languages.

Chinookan. This language was spoken on both sides of the Columbia river in Oregon below the Dalles and some distance up the Willamette river. There are two main dialects, known as Upper and Lower Chinook. The Upper dialect consists of the following subdivisions: Wasco and Wishram in the region of the Dalles, and Kathlamet and Clackamas in the lower valley of the Columbia. The Lower dialect is represented by the Clatsop on the south bank and the Chinook proper on the north bank. The last census gives the population of the five tribes making up the Chinookan stock as 897. Vocabularies, grammatical notes, and discussions of minor importance have been given by Hale, Gallatin, Sapir, and Boas.[2]

[1] Swanton, (*g*), pp. 18–24.

[2] Boas, (*e*); Sapir, (*a*).

Several volumes of texts have been published.[1] A grammatical discussion of the language by Franz Boas, fully illustrated, is included in the Handbook of American Indian Languages.[2]

The phonetics of Chinook present some interesting problems which might repay further attention.

Haida. The Haida, called Skittagetan by Powell, is spoken on the Queen Charlotte islands in two dialects: Skidegate and Masset. Vocabularies are given by Gallatin,[3] Gibbs,[4] Tolmie, Dawson, and others. The really important work on the language has been done by Doctor Swanton, who has published the Masset dialect, 539 pages of text and translation, and the Skidegate dialect.[5] The latter work has texts only to page 109 and English translation in the remaining pages. The American Ethnological Society intends to publish, in volume VII of its Publications, the texts corresponding to the translation of the pages following 110. A grammatical sketch of Haida by Doctor Swanton is in the Handbook of American Indian Languages. The possible or even probable relationship of Haida to Tlingit and to Athapascan has been entertained by Boas, Swanton, and Sapir.

Klamath (Lutuamian of Powell). Two tribes, Modoc and Klamath, speaking a single dialect make up the Klamath stock. The Klamath live about Klamath lakes in south central Oregon; the Modoc formerly lived south of them in northern California. The latter tribe were prisoners of war for many years in Oklahoma. They have now been returned to Oregon. The language was first known from a vocabulary secured by Hale.[7] Doctor Gatschet, as the result of long study in the field, published in 1890 a large number of texts followed by a grammar and dictionary, both Klamath-English and English-Klamath.[8] This was the first thorough study of a language of North America carried through and fully published

[1] Boas, (*f*), (*n*); Sapir, (*c*).
[2] Boas, (*r*), pp. 559–678.
[3] Gallatin, (*b*).
[4] Gibbs, (*c*), pp. 135–142.
[5] Swanton, (*e*), (*b*).
[6] Boas, (*r*), pp. 209–282.
[7] Gallatin, (*b*), p. 100.
[8] Gatschet, (*q*), (*r*).

by one man. It is also Doctor Gatschet's largest and best single contribution to American linguistics.

Kusan. A small stock now nearly extinct was spoken along Coos bay and river, Oregon. Texts collected in 1903 by H. H. St Clair and by Dr L. J. Frachtenberg in 1909 have been published by the latter.[1] A grammatical sketch of the language by Doctor Frachtenberg is in the Handbook of American Indian Languages, Part II.[2] It is unfortunate that a rather dissimilar dialect, Miluk, has become extinct with no record except a few notes secured by Mr St Clair in 1903.

Takelma (Takilman of Powell). This stock consists of a single language spoken in two dialects on the middle portion of Rogue river in southern Oregon. J. Owen Dorsey secured a vocabulary in 1884 which has never been published. On the basis of this vocabulary, Gatschet concluded Takelma was unrelated to other languages.[3] Doctor Sapir very fortunately secured a splendid series of texts in 1906 from Frances Johnston.[4] Based on these texts a grammatical sketch has been included in the Handbook of American Indian Languages, Part II.[5] The last census has but a single individual listed as belonging to this stock.

Tlingit (Koluschan of Powell). The Tlingit language was known to Gallatin and discussed by him under the name Koluschen from a vocabulary by Davidoff.[6] The Tlingit occupy the southern coast of Alaska southward from Controler Bay to British Columbia. They number at present 4,458. The only particularly distinct dialect is that spoken by the Tagish who live in the interior. Doctor Swanton recorded texts among the Tlingit in 1904 which have been published.[7] A grammatical sketch of the Tlingit language prepared by Doctor Swanton appears in the Handbook of American Indian Languages.[8] More text material is needed for this language. It

[1] Frachtenberg, (*a*).
[2] Frachtenberg, (*b*).
[3] Powell, (*c*), p. 121.
[4] Sapir, (*b*).
[5] Sapir, (*f*).
[6] Gallatin, (*a*), pp. 14–15, 305–367.
[7] Swanton, (*f*).
[8] Boas, (*r*), pp. 159–204.

has been frequently suggested that Tlingit is related to Athapascan and perhaps also to Haida. Of the latter suggested relationship Doctor Swanton has a discussion.[1]

Yanan. The Yana seem never to have been numerous. They live in north central California. The language was known only by vocabularies collected by Powell in 1880, and by Curtin in 1884[2] until they were visited by Doctor Dixon in 1900 for the American Museum of Natural History and by Doctor Sapir in 1907 for the University of California. The combined material of Dixon and Sapir was published by the latter. The language is known in two dialects, the northern and central, both of which were recorded by Doctor Sapir. A third dialect, varying more widely, spoken to the south of the first two, was supposed by Sapir to be extinct. Since then a single individual, whose only means of communication was that dialect, has been found. He has been residing for some years at the Museum of Anthropology of the University of California at San Francisco.

Stocks on Which Work is Progressing

Fair progress has been made in the study of eleven other stocks. In the case of several of them considerable material has been gathered which as yet has not been published. For some of the others a fair amount has been published, but this needs supplementing in one direction or another.

Chimakuan. There are said to be two tribes and probably rather distinct languages belonging to this stock. Of the Chimakum tribe the last census reports three persons still alive. They formerly lived in western Washington on the peninsula between Hood canal and Port Townsend. Myron Eells secured a vocabulary of 780 words, which seems never to have been published.[4] The manuscript is in the Bureau of American Ethnology. Professor Boas in 1890 secured 1,250 words together with grammatical forms and

[1] Swanton, (*i*), pp. 472–485.

[2] Powell, (*c*), p. 135.

[3] Sapir, (*e*).

[4] *The American Antiquarian and Oriental Journal*, vol. 3, pp. 52–54, Chicago, 1880–1.

sentences. A digest of his material is published in the *American Anthropologist*.[1] The Quileute live on the coast of Washington south of Cape Flattery. The last census gives the population as 259; and for the subtribe Hoh, 44. No linguistic material from the tribe seems to be in print. They are to be visited during the present year by Doctor Frachtenberg.

Kalapuyan (Kalapooian of Powell). There were formerly a number of dialects spoken in the Willamette valley, Oregon, grouped under the stock name, Kalapuyan. Several of these dialects are now extinct and the number still speaking dialects of the language is about fifteen. Hale secured a short vocabulary (Willamet).[2] Gatschet recorded a vocabulary and a few texts of the Atfalati dialect, now extinct. In 1913, Doctor Frachtenberg secured a vocabulary, grammatical notes, and ten texts. He is now engaged in obtaining additional material.

Kutenai (Kitunahan of Powell). The Kutenai tribe, which makes up the linguistic stock, lives in southeastern British Columbia and northern Montana and Idaho. The language is spoken in two slightly differing dialects. They were visited by A. F. Chamberlain in 1891 and by Professor Boas in 1888 and again in 1914. The results of Professor Boas's first visit appear in *Report of the British Association for the Advancement of Science*.[3] Professor Chamberlain has published a number of papers dealing with the Kutenai language.[4] There are numerous vocabularies by Hale, Tolmie and Dawson, and others.

Maidu (Pujunan of Powell). The Maidu live in north central California east of the Sacramento river and now number 1,100. The language of the Maidu, according to Doctor Dixon, our chief authority, is spoken in three dialects. It was first mentioned by Hale who gives a vocabulary furnished by Mr Dana.[5] Doctor Dixon recorded texts and collected general linguistic material while working among the Maidu for the American Museum of

[1] Boas, (*d*).
[2] Gallatin, (*b*), pp. 97–99.
[3] Boas, (*l*), pp. 889–893.
[4] Chamberlain, (*a–c*, *e–h*).
[5] Gallatin, (*b*), pp. 124–5.

Natural History in 1902 and 1903. The texts have been published,[1] and, a grammatical treatise based on them is in the Handbook of American Indian Languages.[2] Further work should be done with the Maidu, since Doctor Dixon dealt with only one dialect and, because of the other work required of him, he could not devote his time to a thorough linguistic study of them.

Piman. The name Piman was used by Powell as the name for the group of languages spoken in Arizona and Sonora by the Pima, Nevome, Papago, and related tribes. Buschmann considered the Pima related to Nahuatl, the language of the natives of the valley of Mexico, and to the Shoshonean languages.[3] Doctor Kroeber has recently reargued the case.[4] There is a Spanish dictionary of the Nevome dialect made in the 18th century, published in 1862, in Shea's *Library of American Linguistics*, vol. 5. Vocabularies have been published by Doctor Scouler,[5] Doctor Parry,[6] and by Whipple.[7] Dr Frank Russell recorded a goodly number of texts of songs and speeches which have been published with interlinear translations.[8] Juan Dolores has made an analysis of the Papago and has published a list of the verb stems.

Shahaptian. The Shahaptian stock is composed of a number of tribes which formerly lived in southwestern Idaho, southeastern Washington, and northeastern Oregon. The best known of these are: Klikitat, Nez Percé, Paloos, Topinish, Umatilla, Wallawalla, Warm Springs, and Yakima. There are various vocabularies,[9] and a grammar of Nez Percé, by J. M. Cataldo, also a dictionary by L. Van Gorp. Dr H. J. Spinden spent the summers of 1907 and 1908 with the Nez Percé. He recorded some of their myths in texts which have not yet been published. This large and rather diversified family offers an excellent opportunity for intensive and comparative study.

[1] Dixon, (*e*).
[2] Boas, (*r*), pp. 679–734.
[3] Buschmann, (*c*).
[4] Kroeber, (*e*), pp. 154–165.
[5] Scouler, p. 248; Gallatin, (*b*), p. 129.
[6] Schoolcraft, Part 3, pp. 460–462.
[7] Whipple, p. 94.
[8] Russell, pp. 272–389.
[9] Hale, (*a*), pp. 542–561; Gallatin, (*b*), p. 120.

Tanoan. The dialects of the villages of the Rio Grande valley, New Mexico, have recently received the very careful attention of John P. Harrington. As yet he has been able to issue only introductory papers. He makes three groups of these dialects: The Tiwa, including the villages of Taos, Picuris, Sandia, Isleta, and Isleta del Sur, to which he adds the extinct Piro; the Towa, consisting of Jemez and the former village of Pecos; and the Tewa, including San Juan, Santa Clara, San Ildefonso, Nambe, Pojoaque, Tesuque, and Hano. Harrington has published in the *American Anthropologist* on the dialect of Taos,[1] on the Tewa,[2] and on the Piro.[3] In collaboration with Junius Henderson he has published the Tewa names of the animals of the region. Of this extinct dialect, Piro, we have a vocabulary recorded with care by John R. Bartlett, in 1852, published by F. W. Hodge in 1909.[4] The earlier material of the Tanoan dialects consists of vocabularies and a text by Gatschet.[5]

Tsimshian (Chimmesyan of Powell). The Tsimshian live on the northern coast of British Columbia. The language is spoken in three dialects: the Tsimshian proper on the Skeena river and the islands south; the Niska on the Nass river; and the Gyitkshan on the upper courses of the Skeena. According to the latest available figures there are 4,392 speaking these dialects. Count von der Schulenburg discussed the Tsimshian in 1894. Professor Boas has preliminary discussions in the Fifth, Tenth, and Eleventh Reports of the Committee on the Northwestern Tribes of Canada. He has also published two volumes of texts.[6] These texts were written out in Tsimshian by Mr Henry W. Tate, a full-blood, and revised by Professor Boas by the aid of another Tsimshian. A discussion of the grammar has been published by him in the Handbook of American Indian Languages.[7] Additional texts of the three dialects should be recorded.

[1] Harrington, (*c*).
[2] Harrington, (*d*).
[3] Harrington, (*b*).
[4] Bartlett.
[5] Gatschet, (*s*).
[6] Boas, (*s*, *t*).
[7] Boas, (*r*), pp. 283–422.

Wakashan. The Wakashan stock includes two rather distinct groups of dialects. The Nootka, spoken on the west coast of Vancouver island and about Cape Flattery has been known since the voyages of Captain Cook, 1776–80 (published in 1782). The Kwakiutl, itself composed of three groups of subdialects, is spoken on the northern shore of Vancouver island and on the mainland of British Columbia. The northern division consists of the dialect spoken on Gardner inlet and Douglas channel; the central division about Milbank sound and Rivers inlet; and the southern by the tribes of the south. There are known to be four dialects spoken by the southern division of the Kwakiutl proper. Of these only that spoken by the Kwakiutl tribe of Vancouver island has been well studied. Rev. A. J. Hall published a grammar of this dialect in 1889. Professor Boas, chiefly with the assistance of George Hunt, collected and has published many Kwakiutl texts. A grammatical discussion of Kwakiutl by Professor Boas is in the Handbook of American Indian Languages. There are briefer and earlier grammatical sketches in the Sixth and Eleventh Reports of the Committee on the Northwestern Tribes of Canada.[3]

The Nootka, whose language until recently was unrepresented by texts, were visited by Doctor Sapir in 1910 and 1913–1914. He secured 1028 manuscript pages of texts.

The northern and central divisions of the Kwakiutl should receive immediate attention.

Yokuts (Mariposan of Powell). The dialects to which the name Yokuts is attached were spoken in the southern portion of the great interior valley of California and the mountains which border it. Six vocabularies were published in 1877, three of which were recorded by Stephen Powers and two by Adam Johnston.[4] Doctor Kroeber recorded considerable material during the years 1900, 1902–1904, including a few texts.[5] Additional text material should be recorded without delay.

[1] Boas, (*i*, *q*, *u*, *v*).
[2] Boas, (*r*), pp. 423–558
[3] Boas, (*c*).
[4] Powell, (*a*), pp. 570–585.
[5] Kroeber, (*c*).

Yuman. The languages of the Yuman stock, according to J. P. Harrington,[1] fall into three main groups: The eastern includes Havasupai, Walapai, Tonto, Yavapai; the central, Mohave, Yuma, Maricopa, Diegueño, Cocopa; the Lower California, Kiliwi and Santo Tomás, and Cochimi. The people speaking these languages live in Arizona, California, and Mexico. The earlier information and linguistic material, in the form of vocabularies and comments, was edited and published by Turner[2] in 1856, and similar material was edited by Gatschet[3] in 1879. Recently Yuma, Mohave, and Diegueño have received the attention of Mr Harrington. A short discussion of the Yuman languages by him appears in the *Journal of American Folk-Lore.*[4] In conjunction with Doctor Kroeber he has published a short paper on the phonetics of Diegueño.[5] Doctor Kroeber has a paper on the phonetics of Mohave.[6]

Stocks Practically Untouched

There are thirteen linguistic stocks for which the published material is so scanty that little conception of the character of the dialects representing them can be formed. For the larger number of these stocks only short vocabularies are in existence. In all cases there are a sufficient number still speaking the dialects of these stocks to make a thorough study of them possible.

Caddoan. The name Caddoan was chosen by Powell for one of the more widely distributed of the linguistic stocks. There are three geographical groups: the northern, the Arikara who lived with the Mandan and Hidatsa on the upper Missouri; the middle, the four tribes of Pawnee; and the southern, the Caddo, Wichita, and Kichai, formerly in Oklahoma, Texas, and Louisiana. There is a vocabulary of Wichita by Capt. R. B. Marcy taken in 1852, published by him, with remarks by Turner.[7] Another vocabulary by Marcy is in Schoolcraft, part V, pp. 709–712. Whipple took down vocabu-

[1] Harrington, (*a*), p. 324.
[2] Turner, (*b*), pp. 95–103.
[3] Gatschet, (*g*), pp. 399–485; (*e*).
[4] Harrington, (*a*).
[5] Kroeber and Harrington, (*n*).
[6] Kroeber, (*l*).
[7] Marcy, pp. 307–311.

laries of the Pawnee, Kichai, and Hueco (Waco).[1] Mr John B. Dunbar, who was born among the Pawnee, with whom his father was a missionary, contributed a grammatical sketch to Grinnell's *Pawnee Hero Stories and Folk-Tales*.[2] He compiled additional grammatical material and a vocabulary unpublished at the time of his death which occurred this year. No satisfactory linguistic studies have ever been made of any language of the stock.

Miwok (Moquelumnan of Powell). Among the Miwok are included a group of rather scattered dialects in the central portion of the great valley of California and north of San Francisco bay. At times these dialects have been grouped with those now known as Costanoan under the name Mutsun. Several Miwok dialects are printed in *Contributions to North American Ethnology*, Vol. III.[3] Dr C. Hart Merriam has discussed the distribution of the dialects of this stock, called by him Mewan. Dr S. A. Barrett has published a paper on the geographical distribution of the dialects, giving vocabularies as illustrations of dialectic differences.[4] Doctor Kroeber has discussed the dialects of Miwok in two papers. The latter article includes vocabularies and four pages of texts. It is important that text material from the Miwok be collected without delay.

Karok (Quoratean of Powell). The Karok occupy the valley of the Klamath river, California, in the middle of its course. George Gibbs, the first to describe them, secured a vocabulary in 1852.[5] Powers recorded a vocabulary in 1872 which was published with a number of others by Powell.[6] Doctor Kroeber has published a grammatical sketch of the language to which a short text is added.[7] A thorough study of this important language is a pressing need.

Keresan. Although certain villages along the Rio Grande in New Mexico, first visited by the Spanish in 1540, have long been

[1] Whipple, pp. 65–79.
[2] Dunbar, pp. 409–437.
[3] Powell, (*a*), pp. 535–559.
[4] Barrett, (*b*).
[5] Kroeber, (*b*), (*k*), pp. 278–319.
[6] Gibbs, (*a*), pp. 440–445.
[7] Powell, (*a*), pp. 447–457.
[8] Kroeber, (*k*), pp. 427–435.

known as Keres, or Queres, the language they speak has received little attention. Vocabularies by O. Loew and Francis Klett are published by Gatschet.[1] It is believed that Acoma and Laguna, the western villages, have a common dialect somewhat different from that employed in the eastern villages, Cochiti, Sia, Santa Ana, San Felipe, and Santo Domingo.

Kiowan. The language of the Kiowa, one of the best known tribes in North America, is itself almost unknown. There is a vocabulary by A .W. Whipple,[2] and Gatschet has a discussion of the phonetics.[3] Gatschet recorded in 1880 a vocabulary and some texts, but these have never been published. James Mooney, who has devoted much time to the history and ethnology of the Kiowa, has published the texts of some songs and glossaries with some discussion of the language.[4]

Pomo (Kulanapan of Powell). The Pomo dialects, eight in number, are spoken north of San Francisco, California, in Russian River valley and about Clear lake, and on the coast. The dialects and their boundaries were worked out with considerable care by Doctor Barrett, who has published an account of their distribution in which vocabularies are included.[5] Doctor Kroeber has published a discussion of Pomo with word lists and a text.[6] There is earlier material by Gibbs[7] and by Powers.[8] Texts of the various Pomo dialects are much needed.

Washo. This stock is composed of a single dialect, as far as is known, spoken by the Washo who live in Nevada and California in the vicinity of Lake Tahoe. Gatschet[9] decided from a few vocabularies that Washo was not related to any other language. Doctor

[1] Gatschet, (*g*), pp. 424–465. These appear to have been first published in Petermanns Mittheilungen, 1876, pp. 209–216.

[2] Whipple, pp. 78–80.

[3] Gatschet, (*i*).

[4] Mooney, (*b*), pp. 1081–1091; (*c*).

[5] Barrett, (*a*).

[6] Kroeber, (*k*), pp. 320–347.

[7] Gibbs, (*a*), pp. 428–434.

[8] Powell, (*a*), pp. 491–517.

[9] Gatschet, (*h*), p. 255.

Kroeber, incidental to short visits to Reno, Nevada, in 1906, secured a vocabulary, grammatical material, and two texts.[1]

Wintun (Copehan of Powell). The number of dialects included in the Wintun stock is not known. They are spoken in northwestern California along the upper waters of Trinity river. A list of 22 words collected by Mr Dana is given by Hale.[2] Powell published 12 separate vocabularies,[3] collected by several individuals. Mr Wilson, a Harvard student, began work on the Wintun in 1903, but died before much material was collected. Doctor Barrett collected and published vocabularies from three dialects.[4] Work on the dialects of this stock should be inaugurated immediately.

Wiyot (Wishoskan of Powell). There are two vocabularies obtained by George Gibbs in 1852, published first in Schoolcraft,[5] and reprinted by Powell with one by Ezra Williams.[6] Doctor Kroeber has made a special study of Wiyot and has published word lists, grammatical forms, and three texts.[7] It is much desired that additional text material should be recorded.

Yuchean (Uchean of Powell). The Yuchi formerly lived on Savannah river, Georgia; they now live with the Creeks in Oklahoma and are estimated to number 500. Linguistically they have been known only by a vocabulary published by Gallatin, credited by him to Ridge and Ware.[8] Doctor Speck visited them during the summers of 1904 and 1905 for the Bureau of American Ethnology and the American Museum of Natural History. Only a few pages of the linguistic results of this work have appeared in print.[9]

Yukian. There are four languages or strongly differentiated dialects belonging to this stock: the Yuki proper in Round Valley on Eel river, California, the Coast Yuki, on the coast west, the Huchnom, on South Eel river, and Wappo, south on the headwaters

[1] Kroeber, (*d*).
[2] Gallatin, (*b*), p. 122.
[3] Powell, (*a*), pp. 518–534.
[4] Barrett, (*a*), pp. 81–87.
[5] Gibbs, (*a*), pp. 434–440.
[6] Powell, (*a*), pp. 478–482.
[7] Kroeber, (*k*), pp. 384–413.
[8] Gallatin, (*a*), pp. 303–367.
[9] Speck, (*d*), pp. 15–17.

of Russian river. Vocabularies were published in 1877, two of which were recorded by Powers and by Lieut. Edward Ross.[1] The latter first appeared in *Historical Magazine*, Apr. 1863. Doctor Barrett[2] has published comparative vocabularies, and Doctor Kroeber[3] has discussed the Yuki, giving word lists and a text.

Yurok (Weitspekan of Powell). The Yurok language is spoken in the villages along the lower portion of the Klamath river, California, and the coast south including Trinidad bay. There are four dialects, the most important being spoken on the Klamath and the other three on the coast. George Gibbs[4] secured a vocabulary in 1852 which is published in Schoolcraft and republished with others by Powell.[5] Doctor Kroeber, who has recorded considerable Yurok material, has published a grammatical sketch, vocabularies, and a short text.[6] Dr T. T. Waterman has visited the Yurok for linguistic study. It is to be hoped that the material already accumulated by Kroeber and Waterman may soon appear in print.

Zuñi. The language of Zuñi is spoken at one mother village by that name. When first known there were seven villages, those first visited by Coronado. Recently villages have sprung up near the farming lands. The language has been placed on record only in vocabularies collected by Lieut. Simpson,[7] Lieut. Whipple,[8] and Capt. Eaton,[9] and occasional words and short texts in the writings of F. H. Cushing and Mrs Matilda Coxe Stevenson.

Stocks Presenting Comparative Problems

In North America north of Mexico there are eight stocks which offer splendid opportunities for linguistic work. They are particularly attractive because each of them consists of a large number of dialects differing considerably from each other and distributed

[1] Powell, (*a*), pp. 483–9.
[2] Barrett, (*a*), pp. 69–80.
[3] Kroeber, (*k*), pp. 348–383.
[4] Gibbs, (*a*), pp. 440–445.
[5] Powell, (*a*), pp. 447–457.
[6] Kroeber, (*k*), pp. 414–426.
[7] Simpson, pp. 140–3.
[8] Whipple, pp. 91–93.
[9] Schoolcraft, Part 4, pp. 416–431.

over considerable areas. In each of these stocks there are definite sound shifts obeying phonetic laws which can be established, development of lexical contents in accordance with the geographical, social, and economic environment, and often with independent morphological features. To the working out of these problems several individuals are devoting their efforts.

Algonkian. Of all the languages north of Mexico, those composing the Algonkian stock have been brought most constantly to the attention of the general public. From them a considerable number of words in common use have been derived. Among these are: moose, moccasin, squaw, pappoose, squash, succotash. These languages were spoken along the entire Atlantic coast from Labrador to Pamlico sound, North Carolina. In Canada, they reached as far west as the Rocky mountains. With the exception of the Iroquois, the Algonkian tribes formerly occupied the vast territory north of the Ohio river and east of the Mississippi. Besides, there were great Algonkian-speaking tribes, the Cheyenne, Arapaho, and Gros Ventre, on the western prairies. These many languages and dialects fall into four great groups: Blackfoot, Cheyenne, Arapaho, and Eastern-Central. The Blackfoot group includes the languages of the closely related tribes, Piegan, Blood, and Blackfoot. The Cheyenne consists of the language spoken by that tribe and probably the extinct Sutaio. The Arapaho includes the language of the Gros Ventre (Atsina) as well as the Arapaho proper. These three western groups of languages are in sharp distinction from the Eastern-Central group. The latter group may be subdivided into Central and Eastern sub-groups. The Central sub-group contains (a) Cree-Montagnais; (b) Menomini; (c) Sauk, Fox, Kickapoo, Shawnee; (d) Ojibway, Potawatomi, Ottawa, Algonkin, Peoria; (e) Natick, (f) Delaware. The Eastern sub-group consists of the Micmac, Malecite, Passamaquoddy, Penobscot, and Abnaki. A discussion of the relationship of Algonkian languages has been published by Doctor Michelson,[1] from which account the above summary has been made. The literature of the Algonkian languages begins in 1609 when Lescarbot included the numerals from

[1] Michelson.

1 to 10 in his *Histoire de la Nouvelle France*. Pilling, who published a bibliography of Algonkian linguistic literature in 1891,[1] reported 36 grammars, 45 dictionaries, and 609 vocabularies. The grammars include one of Delaware by Zeisberger translated by Duponceau, one of Cree by Lacombe, one of Blackfoot by Tims, and of Micmac by Rand. Besides the translation of the complete Bible by Eliot into the Massachuset language and by Mason into Cree, parts of the Bible have been rendered into a large number of languages by the various missionaries. The Cree syllabaries mentioned above have greatly facilitated the publication in the various languages of material to be read by the Indians. The serious scientific study of the Algonkian languages began with the field-work of William Jones, whose paternal grandmother was a Fox Indian. From this grandmother, with whom Jones lived for nine years in his childhood, he acquired the Fox language. He was graduated from Harvard University in 1900 and took the degree of Ph.D. at Columbia University in 1904. Doctor Jones's field-work began in 1901 and continued until 1906. During these years he collected texts and general linguistic material from Fox, Kickapoo, and Ojibway. This work was supported by the American Museum of Natural History, the Bureau of American Ethnology, and the Carnegie Institution of Washington. Before the material could be published, Doctor Jones was induced to leave this field for which he was so peculiarly fitted and to go to the Philippine Islands where he lost his life. Of the material recorded by him a volume, *Fox Texts*,[3] was published in 1907. *Kickapoo Texts*,[4] volume 9 of the same series, and *Ojibway Texts*, volume 7, are in press. A grammatical sketch of Fox appears in the Handbook of Indian Languages.[5] This material has been issued under the direction of Professor Boas to the revision and amplification of which Doctor Michelson has generously contributed.

On his own account Doctor Michelson has worked with Piegan,

[1] Pilling, (*e*).
[2] Eliot, (*a*).
[3] Jones, (*b*).
[4] Jones, (*c*).
[5] Boas, (*r*), pp. 737–875

Cheyenne, Sutaio, Arapaho, Atsina, Menomini, Ojibway, Ottawa, Potawatomi, Fox, Sauk, Kickapoo, Cree, Shawnee, Munsee, Delaware, Micmac, Penobscot, and Abnaki. Of these various languages he has grammatical notes and of most of them a few texts. The grammatical notes in part have been published in the *Linguistic Classification of Algonquian Tribes*,[1] referred to above. The texts have not been published. Of the Fox language, Doctor Michelson has upward of 9000 manuscript pages.

Two European scholars, Dr H. P. B. de Josselin de Jong and Dr C. C. Uhlenbeck have contributed to the Algonkian linguistic work both in field-work and publications. Doctor de Jong visited the Ojibway in 1911 and has published collections of songs and texts.[2] Doctor Uhlenbeck spent the summers of 1910 and 1911 with the Blackfoot and has issued to date two collections of texts of that language.[3]

The work remaining to be done is very considerable and should be participated in by several individuals in order to secure the best and speediest results.

Athapascan. The number of dialects making up the stock generally called Athapascan is unknown. They fall into three geographical groups: Those spoken in a large and continuous area in the northern portion of North America including the drainage of the Mackenzie and Yukon rivers; those spoken along the Pacific coast in Washington, Oregon, and northern California; and those spoken in the Southwest, in Arizona, New Mexico, and Oklahoma. The first words of this stock appear to have been recorded in 1742 on board His Majesty's ship *Furnace* by Edward Thompson, surgeon of the ship. The dialect is that of the "Northern Indians inhabiting the Northwest Coast of Hudson's Bay." The vocabulary is published in *An Account of the Countries adjoining Hudson's Bay*,[4] by Arthur Dobbs. During the years 1767–1772 Samuel Hearne was traveling in the country of the Athapascans. He

[1] Michelson, (*a*).
[2] de Josselin de Jong, (*a*).
[3] Uhlenbeck, (*c*), (*d*).
[4] Dobbs, pp. 206–211.

went from Hudson bay to the Coppermine river and Great Slave lake. Alexander Mackenzie in 1789 followed the river which bears his name to its mouth and in the years 1792–1793 crossed the Rocky mountains and reached the Pacific ocean. His two journeys were almost entirely within the territory of those speaking Athapascan dialects. Petitot, during several years of residence on the Mackenzie river, published a book of myths and tales which contains a number of excellently recorded texts.[1] He also compiled a large comparative dictionary as an introduction to which he supplied a brief comparative grammar.[2] Father Legoff, who has resided for many years with the Chipewyan, published in 1889 a grammar of that language. Father Morice acquired the language of the Carriers of British Columbia, and has contributed many articles on the Déné languages, as he prefers to call them. The solid contributions of Father Jetté and the Rev. Chapman have been mentioned above. Dr J. Alden Mason visited the Dog Rib and Slavey on Great Slave lake for the Geological Survey of Canada in 1913 and secured much material as yet unpublished. The writer spent the summer of 1905 with the Sarsi, a few weeks in 1911 with the Chipewyan of Cold lake, and the summer of 1913 with the Beaver. The Chipewyan material has been published in vol. 9 of the *Anthropological Papers* of the American Museum of Natural History, and the Sarsi is in the University of California Press.

The Athapascans of the Pacific coast are known by vocabularies recorded by Gibbs, Powers, and others. The writer, while connected with the University of California, recorded texts of the Hupa, Talowa, Chilula, Whilkut, Nongatl, Lassik, Wailaki, Sinkyone, and Kato. The Hupa, Kato, and Chilula material has appeared in the University of California Publications in American Archaeology and Ethnology.[3]

The connection of the southern group with the northern Athapascans was first recognized by Turner in 1852.[4] His conclusions were

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[1] Petitot, (*c*).
[2] Petitot, (*a*).
[3] Goddard, (*a* to *e*).
[4] Turner, (*a*).

based on vocabularies by Simpson and others. Dr Washington Matthews worked for many years among the Navaho; he published many words and phrases and texts, particularly of songs.[1] The Franciscan Fathers of St Michaels, Arizona, have acquired the Navaho language and have published a dictionary.[2] F. G. Mitchell, assisted by Alexander Black, has issued a phrase book with conjugations, etc. The Bible has been translated into Navaho by Mr Mitchell and is now being printed. The writer has spent considerable time with the Jicarilla,[3] Mescalero, San Carlos, and Kiowa Apache.

Eskimo. The Eskimo dialects are spoken on both coasts of Greenland and along the Arctic coast of North America from Labrador westward to Copper river, Alaska. There are also Eskimo-speaking tribes in northeastern Asia. The natives of the Aleutian islands speak dialects which are related to those of the Eskimo proper. This long and narrow strip of occupied territory has produced a large number of dialects, each generally varying but slightly from its nearest neighbors. According to Thalbitzer, who has made careful personal studies of three Greenland dialects, the Alaskan dialects are about as different from those of Greenland as are English and German.[4] With the five Greenland dialects he classes those of Baffin land, Smith sound, and Labrador. The dialects of the Central Eskimo are not well enough known for final classification.

Eskimo were known in northern Europe long before the discovery of America. The natives of Greenland have been under the influence of the missionaries for about two centuries. During this time much of the Bible and a great deal of religious literature has been translated and composed in the dialects of Greenland. The grammars and dictionaries produced by two of these missionaries rank among the foremost contributions from missionary sources to the American languages. Paul Egede published a dictionary in

[1] Matthews, (*b*, *c*, *d*).
[2] Franciscan Fathers, (*a*, *b*).
[3] Goddard, (*f*).
[4] Boas, (*r*), p. 971.

1750 and a grammar in 1760. These have formed the foundations of Eskimo linguistic study. S. Kleinschmidt, also a missionary, published a grammar in 1851 and a dictionary in 1871. The orthography of Kleinschmidt has been generally adopted as the standard for Eskimo work. H. Rink, for some years a Government official in Greenland, acquired a considerable acquaintance with the Eskimo of Greenland. He published vocabularies and collected a large body of texts which have unfortunately disappeared. Recently Dr William Thalbitzer, trained in phonetics by Jespersen, has undertaken a study of the Eskimo of Greenland. He has published the first phonetically adequate treatment of any American language, if not of any non-literary language, anywhere.[1] There are in existence numerous vocabularies and minor grammatical discussions of many Eskimo dialects of the continent of North America. We lack as yet carefully recorded texts or grammatical treatises of scientific worth of the western dialects.

Iroquoian. The first words of any American language ever printed, according to Pilling, were Iroquoian. Cartier has a Huron vocabulary in a work published in 1545. The Iroquoian-speaking tribes when first known to Europeans were in three geographical groups. The Huron or Wyandot were north of the St Lawrence river, later about Lake Simcoe, Ontario. The Five Nations (Cayuga, Mohawk, Oneida, Onondaga, and Seneca) were in New York. Adjoining them on the south were the Conestoga and Susquehanna on the Susquehanna river, in Pennsylvania and Maryland; the Tuscarora were in North Carolina and the Cherokee in the southern Alleghenies. The very abundant linguistic literature on the Iroquoian stock prior to 1888 is listed and discussed by Pilling.[2] This literature, considerable in bulk, is mostly missionary in origin. Sequoya, a mixed-blood Cherokee, about 1820, invented a syllabary based on the Roman alphabet, the sounds of which he did not know. By means of these characters a newspaper and a native literature were printed and the Cherokee became a literary people. Mr J. N. B. Hewitt has been engaged since 1880 in the

[1] Thalbitzer, (*a*).

[2] Pilling, (*c*).

study of the Iroquoian languages. Since 1886 he has been connected with the Bureau of American Ethnology. The Geological Survey of Canada, since undertaking anthropological research in 1910, has devoted considerable attention to the Iroquoian peoples. Mr C. M. Barbeau has devoted himself particularly to Huron. While at present there does not exist in printed form texts or grammar produced primarily for linguistic purposes, it is expected that much material will some time be available. It is important that a group so interesting linguistically should be carefully and efficiently worked.

Muskhogean. A large number of dialects formerly spoken in the southeastern United States fall together into the Muskhogean stock. The subdivisions of this stock, according to Doctor Swanton, are as follows:

I. Muskhogean proper, *a* Southern division: 1, Hitchiti; 2, Apalachee; 3, Yamasi; 4, Alabama (including Koasati); 5, Choctaw (including two dialects of Choctaw and one of Chickasaw); *b* Northern division: 1, Muskogee or Creek.

II. Natchez dialects, of which only Natchez has been recorded. To the same group belonged the Avoyel and Taensa of which there are no records. Of the Choctaw and Muskogee there is abundant missionary literature, including translations of parts of the Bible and grammars and dictionaries to aid in acquiring the language. This literature has been listed by Pilling. Many thousand people still speak these two languages, many of them being able to read and write them as well. The printed material of the other dialects is somewhat scanty. Doctor Gatschet gave considerable attention to the Muskhogean languages, collecting vocabularies, grammatical material, and a few texts. Some of this material he published in *A Migration Legend of the Creek Indians.*[1] Doctor Swanton has undertaken the Muskhogean field, having spent many months in field-work since 1907, visiting the remnants speaking dialects likely soon to disappear. He has recorded texts as follows: 250 pages in Natchez, 250 in Alabama, 100 in Koasati, 150 in Hitchiti. Doctor Swanton has collected vocabulary material of his own and has

[1] Gatschet, (*k*).

worked over the material left by Doctor Gatschet and the published material of Byington on Choctaw, analyzing the language and determining the stems. Doctor Swanton, if uninterrupted, will be able to produce a comparative grammar and dictionary of the Muskhogean dialects. When that has been accomplished the question of relationships outside of the now recognized stock can be intelligently and conclusively discussed.

Salishan. The Salish languages are spoken in British Columbia and Washington between the Rocky mountains and the Pacific. The Salish dialects are grouped geographically as follows:

I. Dialects of the interior: Lillooet, Ntlakyapamuk, Shushwap, Okinagan, Flathead, Cœur d' Alêne, Columbia group.

II. Coast dialects: Bellacoola, Comox, Cowichan, Squawmish, Songish, Nisqualli, Twana, Chehalis, Tillamook.

There are many published vocabularies of Salish dialects, notably those of Hale, Gibbs, Tolmie and Dawson, and Boas. Professor Boas has published a grammatical discussion of Bellacoola. Myron Eells has a note on the Twana language in the *American Antiquarian.* The vocabularies of George Gibbs are in the *Contributions to North American Ethnology*,[2] and include also a dictionary of Niskwalli. Recently, at the suggestion of Professor Boas, James Teit has made a thorough dialectic survey of the Salish tribes. The results are being published with a map as volume 3 of *Columbia University Contributions to Anthropology.* This exceedingly difficult and important field awaits the attention of some person or persons who will record sufficient text material to furnish a basis for a comparative grammar. From the known variation in both phonetics and morphology, it is certain such work will produce results of great value.

Shoshonean. The languages and dialects generally known as Shoshonean were spoken throughout the greater part of the Great Basin from the Colorado and San Juan rivers on the south nearly to the Canadian boundary on the north. Shoshonean languages are also spoken in western Texas, in the Hopi pueblos of Arizona,

[1] Boas, (*a*), also in *Science*, vol. 7, p. 218 (1886).

[2] Gibbs, (*b*), pp. 247–283.

and in southeastern and southern California. Many vocabularies have been recorded and published. Gallatin has a very short one;[1] Turner has several collected by Whipple.[2] The most representative vocabularies are included in the *Report upon the United States Geological Survey West of the 100th Meridian*, which received the editorial attention of Gatschet.[3] Doctor Kroeber, in connection with other field-work for the American Museum of Natural History in 1903, and in 1904 for the University of California, secured considerable additional material. Most of this was in the form of vocabularies. By means of these vocabularies he has been able to classify the various dialects into definite groups. These are: The Pueblo branch (Hopi); the Plateau branch consisting of Ute-Chemehuevi, Shoshoni-Comanche, and Mono-Paviotso groups; the Kern River branch; and the southern California branch, consisting of Serrano, Gabrieleño, and Luiseño-Cahuilla groups.[4] Similar material bearing on the dialects of southern California by the same author is in the same series.[5] Additional material from the Bannock and Shoshoni led Doctor Kroeber to a rediscussion of the groups making up the Shoshonean stock, published with the new material.[6] The University of California has a grammar and dictionary of the Luiseño dialect by Philip A. Sparkman in manuscript. Some grammatical information concerning this dialect was published by Mr Sparkman.[7] Doctor Waterman has made a study of the phonetics of the Northern Paiute dialect, which is published with tracings and other illustrations.[8] At present there are no published texts of Shoshonean languages. Doctor Sapir in 1909 recorded 63 manuscript pages of texts of the Uncompahgre and Uintah Ute dialects. He also secured 277 manuscript pages of texts from a Carlisle student, a Southern Paiute. The Shoshonean

[1] Gallatin, (*a*), p. 378.
[2] Turner, (*b*), pp. 71–77.
[3] Gatschet, (*g*), pp. 424–479.
[4] Kroeber, (*e*), pp. 65–165.
[5] Kroeber, (*h*), pp. 235–269.
[6] Kroeber, (*i*), pp. 266–277.
[7] Sparkman, pp. 656–662.
[8] Waterman, pp. 13–44.

languages present special difficulties in phonetics. Someone with an exceptional ear or with mechanical aids should undertake this important field in which so much remains to be done, unless Doctor Sapir's other duties will allow him to continue.

Siouan. Rivaling the Algonkian-speaking peoples in popular interest are the users of the Siouan tongues. As the Algonkian tribes held the great eastern forests, so the Siouan peoples occupied the great buffalo plains. Roughly speaking, they occupied the region between the Mississippi and the Rocky mountains from Canada to the Arkansas river. A second division of Siouan languages was spoken in the southern Appalachian region. In addition to these two large groups are two isolated dialects, the Biloxi on the Gulf coast in Mississippi and the Ofo on the Yazoo river. They may be classified as follows:

A. Dakota-Assiniboin: (1) Mdewakanton, (2) Wahpekute, (3) Sisseton, (4) Wahpeton, (5) Yankton, (6) Yanktonai, (7) Teton, (8) Assiniboin.
B. Dhegiha: (1) Omaha, (2) Ponca, (3) Quapaw, (4) Osage, (5) Kansa.
C. Chiwere: (1) Iowa, (2) Oto, (3) Missouri, (4) Winnebago.
D. Mandan.
E. Hidatsa: (1) Hidatsa, (2) Crow.
F. Biloxi: (1) Biloxi, (2) Ofo.
G. Eastern: (1) Tutelo, (2) Catawba, and several extinct and problematic dialects.

The main sources of linguistic material are missionary, the works of Riggs and the excellent material brought together by J. Owen Dorsey, who after several years of missionary labor devoted himself to linguistic and ethnological work, chiefly with the Omaha and Ponca. Riggs, besides translating the Bible and much religious literature into Santee Sioux for the use of the Indians, furnished a volume of texts with interlinear translations, a grammar, and dictionary, which remain our chief and most valuable sources of information concerning the Santee.[1] Dr Washington Matthews, while stationed as army surgeon on Ft Berthold reservation, North Dakota, made a thorough study of the Hidatsa, published

[1] Riggs, (*a*), (*b*).

by the United States Government in 1877.[1] Mr Dorsey was missionary with the Ponca Indians from 1871 until 1873 when ill health caused him to retire. During this time, however, he acquired a speaking knowledge of Ponca. From the organization of the Bureau of Ethnology in 1879 until his untimely death in 1895 most of his time was given to linguistic work with Siouan tribes.[2]

Under the direction of Mr Dorsey, George Bushotter, an educated Teton, wrote out 201 texts, in his own dialect. These were deposited in the Bureau and a portion has recently been revised with native help by Doctor Swanton. Doctor Swanton has also edited 31 Biloxi texts and a Biloxi dictionary left by Mr Dorsey.[3] In the same publication is included material secured in 1908 by Doctor Swanton from an Ofo woman, the last of her tribe supposed to have been long extinct.

Of the Catawba language we have a grammatical sketch by Doctor Gatschet and some texts by Doctor Speck.[4]

Doctor Frachtenberg secured a few words of Tutelo from an old Tutelo woman.[5] From a Cayuga Indian Doctor Sapir in 1911 secured a few words of Tutelo which is now extinct.[6] Still more material, left unpublished by Doctor Dorsey, is in possession of the Bureau of American Ethnology.

Dr Paul Radin has recorded a large amount of text material among the Winnebago, and Dr Robert H. Lowie has taken many texts among the Crow, Hidatsa, and Mandan. Of this material only the Mandan and a few pages of the Crow have been published.

Additional work should be undertaken in the Siouan field until each language is represented by a body of texts. It is particularly important that a careful phonetic survey be made, since the material now on record has been taken down by several individuals.

A grammatical sketch based on Santee and Teton by Boas and Swanton is included in the *Handbook of American Indian Lan-*

[1] Matthews, (*a*).
[2] Dorsey, (*a*), (*b*), (*c*).
[3] Dorsey and Swanton.
[4] Gatschet, (*v*), pp. 527–549; Speck, (*e*), pp. 319–330.
[5] Frachtenberg, (*d*), pp. 477–479.
[6] Sapir, (*g*), pp. 295–297.

guages.[1] A comparative grammar of the Siouan languages might be made if some individual would devote himself to the work for a few years. It would be an exceedingly valuable contribution to our knowledge of American linguistics.

CONCLUSION

There remains a great amount of linguistic work to be done. With so little known of the origin of languages, and the conditions controling their development and their dispersion, it is important that a record should be preserved of every language spoken. In order that that record be adequate, great care must be taken in phonetic representation. The sounds which correspond to the characters employed in writing should be so carefully described as to their manner of articulation and their acoustic effects as to make them thoroughly intelligible for all time.

Sufficient material from each dialect should be recorded in the connected form of texts to furnish a fairly complete lexicon of the words it contains and a representation of the grammatical forms in use.

Ultimately the material of each language should be as fully analyzed as possible that the definite force and meaning of each element may be determined. These should be listed by some alphabetical system in order to make them easily available for comparative purposes. The relationship of these elementary parts to each other in the language itself, when determined and adequately set forth in a grammar, completes the most essential study of the individual language or dialect.

In the case of the larger stocks comparative dictionaries and grammars should be made with a full discussion of the phonetic, lexical, and morphological relationship of the dialects composing them. With such material available, the relationship of the languages of America may be discussed with success and comparison with the languages of other continents profitably made.

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[1] Boas, (*r*), pp. 875–965.

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CEREMONIALISM IN NORTH AMERICA

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IN delimiting the range of cultural phenomena to which this paper will be confined, it is impossible to adhere to any of the current definitions of "ceremony" or "ceremonial." A set mode of procedure is characteristic of every phase of primitive behavior, and thus it is justifiable to speak of birth, puberty, death, war ceremonies, etc. An article on "ceremonialism" in this sense would needs center in a discussion of the psychology of routine. When, however, Americanists speak of "ceremonialism," they generally associate with the term a more or less definite content of stereotyped form. Performances such as the Snake Dance of Pueblo peoples, the Sun Dance of the Plains, the Midewiwin of the Woodland area, are examples *par excellence* of what is commonly understood by a "ceremony." These performances are not individual, but collective undertakings; and, even where they hardly fall under the category of "religious observances" or "solemn rites," they are uniformly more than mere attempts at social amusement. As Indian dances are often performed for a serious purpose, or at least form elements of complexes of a serious character, the terms "dance" and "ceremony" are sometimes used interchangeably. This loose usage is as undesirable as the frequent identification of the problem of ceremonialism with that of organizations. There are North American dances performed exclusively as a matter of amusement, and there are organizations corresponding to our clubs rather than to ceremonial bodies. Elements of similarity may necessitate joint consideration of the ceremonial and non-ceremonial dances and societies; but it may be well to state that, in dealing with "ceremonialism," we start primarily from a consideration of solemn collective performances with an avowedly serious purpose, and shall include only such other phenomena as are historically or psychologically related to "ceremonialism" as thus defined.

Having regard to the limitation of space, a descriptive account of

ceremonial activity in North America is out of the question here. I shall therefore merely enumerate the most important ceremonies in the several culture provinces, and shall then select for discussion a number of problems that arise from the consideration of our ceremonial data.

In the Eastern Woodland area, the Midewiwin looms as the most important ceremony of the Algonquian tribes, though its sphere of influence extended to several Siouan peoples, including some inhabiting the Plains. It was the property of a secret society, membership in which was preceded by a formal initiation. A shooting performance, either by way of initiating the novice or merely as a shamanistic practice, forms the most obvious objective bond between the forms of the ceremony as practised by the several tribes; while the interpretation of the aim of the ceremony varies.[1] The Iroquois also had a number of secret ceremonial organizations of as yet little understood character, of which may be mentioned the Little Water Fraternity and the False Face Society; the performances of the latter being characterized by the use of grotesquely carved face-masks. In addition, there was a series of tribal seasonal festivals, ostensibly in the nature of thanksgiving celebrations, held annually at such periods as the first flowing of the maple-sap, the planting and the ripening of the corn, etc. These ceremonies, as well as the seven-days' New Year's Jubilee, correspond in a way to the spectacular composite performances of other areas in which religious practices are combined with entertainments of various forms.[2]

In the Southeast all other dances were completely overshadowed by the annual several-days' (from four to eight) festival known as the "Busk," and celebrated on the first ripening of the crops. The public making of new fire, the scarification of the men, and the taking of an emetic, are among the noteworthy objective features. The new-fire ceremony, as pointed out by Speck, has analogies not only in the Southwest, but even in Mexico; and the taking of an emetic is shared with some southern Plains tribes and the Pueblo Indians.[3]

[1] Jones, in Annual Archæological Report, p. 146; Radin 1 (see Bibliography, pp. 629–631); Hoffman.

[2] Parker and Converse, pp. 74 *et seq.*, 149 *et seq.*; Morgan, pp. 187–222, 263–289.

[3] Speck, pp. 112–131.

In the Plains area, ceremonial activity attained a very high degree of development, though this was shared in very unequal measure by the several tribes. The Sun Dance, the great tribal performance of most of the inhabitants of the area, will be discussed below. Other ceremonial performances of wide distribution center in the rites connected with sacred bundles of restricted ownership. The widely diffused medicine-pipe ceremonials, the sacred-bundle rites of the Blackfeet, and the shrine performances of the Hidatsa, may serve as examples. There are mimetic animal dances, those in imitation of the buffalo occurring in varying guise and with varying *raison d'être*, such as the luring of the game. Some of the last-mentioned category of performances are the property of individuals who have experienced a vision of the same supernatural animal. Military and age societies, though in certain tribes wholly or predominantly secular, assume in others a markedly ceremonial aspect.[1]

Among the Southwestern Indians, North American ceremonialism attains its high-water mark. There is a profusion of ritualistic externals, — wooden or sand-painted altars, prayer-offerings, masks, sacred effigies, and the like, — and esoteric fraternities perform elaborate ceremonies in order to heal the sick, or for the ostensible purpose of promoting the public welfare by effecting adequate rainfall or insuring success in the chase or war. These performances resemble the Iroquois festivals and the Plains Indian Sun Dance in being composite phenomena in which strictly religious features are blended with games, clownish procedure, and what not. The Hopi and Zuñi ceremonies further recall the Iroquois festivals in being calendric; that is, following one another in fixed sequence at stated seasons of the year.[2]

On the Northwest coast and its immediate hinterland we find the potlatch festival, involving a generous distribution of property by the host that entails a return distribution of gifts at a high rate of interest. Upon this secular basis there have been engrafted, among the northern tribes of the area, ceremonial concepts derived from the

[1] Dorsey, G. A., 1, 2; Dorsey, J. O.; Fletcher; Fletcher and La Flesche; Kroeber 1, 2; Lowie 1, 2; Wissler 2, 4.

[2] Fewkes 1, 2; Matthews; Stevenson 1, pp. 16, 69–131; 2, pp. 62–283.

Winter Ritual of the northern Kwakiutl, from whose territory they have likewise extended southward. The Winter Ritual is founded on the novice's acquisition of a supernatural protector, whose character is in a measure predetermined by his family affiliations, or rather restricted by his family's supernatural property rights. During the winter, community of guardian spirits forms the bond of association, superseding family ties, and creating temporarily a number of ritualistic societies. The ritual purports to portray the novice's abduction by the guardian spirits, their return to the village, and their restoration to a normal condition. In reality it is a compound of these elements with potlatch incidents, sleight-of-hand exhibitions, clownish activity, and so forth.[1]

Among the Eskimo unaffected by neighboring Indian peoples, ceremonialism apart from shamanistic practices is but slightly developed. The Central Eskimo have an annual festival that purports to effect the home-sending of the deity protecting the sea-mammals, and during which the shaman purges this deity's body by removing the effects of transgressed taboos. The appearance of masked performers impersonating the divinity and other spirits is a noteworthy trait of this ceremony.[2]

Paucity of ceremonial is a trait shared by the inhabitants of the Mackenzie area, the Plateau region, and California, all of whom present the least highly developed form of North American culture. Professor Kroeber has pointed out that the simpler the stage of culture the more important is the shaman.[3] The statement might be extended from shamanistic practices to those practically universal observances connected with such events as birth, puberty, individual acquisition of supernatural power, and death. They, like the shamanistic functions in Kroeber's characterization, tend to become, "relatively to the total mass of thought and action of a people, less and less important." It thus seems possible to consider ceremonialism *par excellence*, as defined above and treated by preference in this article, a relatively recent trait superimposed on a series of simple routine

[1] Boas 2, 3; Swanton 1, 2.

[2] Boas 1, pp. 583–609; 4, pp. 119 *et seq.*, 489 *et seq.*

[3] Kroeber 3, p. 327.

procedures of the type just mentioned. The culture of the Mackenzie River people is relatively little known, but the prominence of shamanism and sleight-of-hand tricks appears clearly from Hearne's and Petitot's accounts;[1] and among the Thompson River Indians the puberty ceremonials loom as a very important cultural feature.[2] Shamanism with its correlated practices, and puberty rites, are known in other areas, but they are often eclipsed by the doings of esoteric brotherhoods and other spectacular performances. This is merely grazing a significant problem; and it must be clearly understood that, even in the ruder North American cultures, phenomena comparable to the more impressive ceremonials of other regions are not wholly lacking. Thus the Ute and related Shoshoneans celebrate an annual spring festival known as the "Bear Dance;"[3] a series of winter dances with ceremonial raiment occurs among the Central Californian Maidu; and other Californian tribes have public annual mourning ceremonies and the semblance of a secret society formed by initiated male tribesmen.[4] The occurrence of these elements even in the simplest cultures seems to indicate rather clearly that the differences in ceremonial development are not correlated with psychological differences, but rather with differences in the manner of combining and multiplying elements of general distribution. A hint as to the luxurious growth of ceremonialism in certain areas will be found in the section on "Ceremonial Patterns," though why a certain feature extant in a number of regions should become a pattern in one tribe, and fail to become one in others, remains obscure.

Another question, which it is impossible more than to hint at here, relates to the distribution of ceremonial traits less widely diffused than those just dealt with. Thus ceremonial public confession is a trait shared by the Eskimo[5] with the Iroquois[6] and the northern Athapascans.[7] In this case geographical considerations point with overwhelming force to an explanation by historical contact. The

[1] Hearne, pp. 191–194, 214–221; Petitot, pp. 434–436.
[2] Teit, pp. 311–321.
[3] Field information by the writer.
[4] Kroeber 3, pp. 334 *et seq.*
[5] Boas 4, p. 121.
[6] Morgan, p. 187.
[7] Petitot, p. 435.

above-mentioned instance of the new-fire ceremony forms perhaps an almost equally good case in point; but in other cases the matter is less certain, though odd features of capricious distribution haunt the mind with visions of possible historical connection. Thus Boas refers to the rather striking analogies between the tortures of the Kwakiutl War Dance and the Plains Indian Sun Dance.[1] The phenomenon of ceremonial buffoonery that crops up among the Iroquois, the western Ojibwa, many of the Plains tribes and Pueblo Indians, as well as in California and on the Northwest coast, presents probably too general a similarity (except among tribes obviously in contact with one another) to be considered of historical significance. Nevertheless some specific analogies are puzzling. Thus the Tlingit have so distinctive an element of Plains Indian clownishness as the use of "backward speech;" that is, expression of the exact opposite of the intended meaning.[2] Only a much fuller knowledge of the distribution of ceremonial elements and complexes will help us estimate the relative value of the theories of historical contact and independent development in such concrete instances. For the time being, it will be well to regard historical contact as established only in the clearest cases, though these are by no means few (see below, "Diffusion of Ceremonials").

MYTH AND RITUAL

In many cases a ceremony is derived by the natives from a myth accounting for its origin. Native statements, however interesting in themselves, cannot of course be taken as objective historical fact. Hence arises the question, Is the myth the primary phenomenon on which the ceremony is founded, or is it merely a secondary explanation of the origin of a pre-existing ceremony? A considerable amount of information bearing on this problem has been recorded; here only enough can be presented to illustrate essential principles.

The Crows and Blackfeet share a ceremonial planting of Sacred Tobacco. As this performance has not been found among other tribes of this area, and as there are similarities of detail, the single origin of the common features of the ceremonies as performed by the two tribes

[1] Boas 2, pp. 495, 661.

[2] Swanton 2, p. 440.

is certain. Among the Blackfeet, however, the Sacred Tobacco forms part and parcel of the Beaver Medicine Bundle. This is in its entirety derived from a Beaver, who, after luring away a Blackfoot's wife, indemnified the husband by sending the woman back with the Beaver Bundle.[1] The Crows, on the other hand, do not associate their Tobacco with the beaver, but identify it with the stars. According to the most popular version, the discovery of the Tobacco dates back to the period of their legendary separation from the Hidatsa, when one of two brothers was adopted by the stars, blessed with the vision of the Tobacco, and instructed as to the ceremonial planting. The same ritualistic features are thus associated with two distinct myths in the two tribes; hence at least one of the myths is certainly secondary, which establishes in principle the possibility of such a secondary association. For the secret ceremonials of the Northwest coast of North America, a corresponding conclusion was long ago drawn by Professor Boas. Of the several tribes sharing the ceremonies in question, some derive their performances from the wolves, others from heaven, still others from the cannibal spirit or from a bear. In all cases but one, the explanation *must* be secondary, and, with the possibility of such explanation established, it becomes psychologically justifiable to treat the residual case as falling under the same category: the ritualistic myth is an ætiological myth. Ehrenreich has duly emphasized the occurrence of demonstrably secondary connection between ritual and myth in North America; and, since the rituals and myths of this continent are better known than those of any other area of equal magnitude, he rightly insists that the conclusions derived from this basis have general significance for the problem of the relationship of these associated elements.[2]

Boas and Ehrenreich not only strengthen the case for secondary connection, but also demonstrate the workings of the ætiological instinct by proving that in not a few cases a ritual is accounted for in a single tribe by attaching it to a folk-tale or folk-tale episode of very wide distribution. In such instances the question of the priority of

[1] Wissler 1, pp. 74 *et seq.*, 78 *et seq.*

[2] Ehrenreich, p. 84.

the tale or ritual is, of course, immaterial: there is secondary association of previously independent units.

Thus, among the Heiltsuk alone, the story of a woman who gave birth to dogs is used to explain the establishment of the Cannibal Society. As this tale is found without any ceremonial associations among the Eskimo, all the northern Athapascans, and all the Northwest coast Indians, its secondary application to the Heiltsuk ritual is manifest. In other words, not only is the same ritual explained by different myths in different tribes, but, in the attempt to account for the origin of the ritual, there is a tendency to use popular tales that come to hand.[1] This tendency, it may be noted, is strongly developed in other regions of the continent. The Hidatsa and Mandan associated the custom of planting certain offerings by the bank of the Missouri with the tale of the young man who ate of the flesh of a snake, became transformed into a snake, and was carried to the Missouri by his comrade.[2] According to my own field data, these offerings formed part of the Hidatsa Missouri River ceremony, one of the sacred rituals of the tribe. Similarly, the Bird ceremonial of the same tribe is connected with the exceedingly widespread story of the thunderbird's antagonism to a water-monster. Examples of this type certainly seem to justify in considerable measure Ehrenreich's conclusion: "Jedenfalls liegen der Regel nach einem Kultmythus schon anderweitig bekannte Stoffe oder in anderen Verbindungen vorkommende mythische Elemente zugrunde. Was das Ritual dem hinzufügt, ist äusseres Beiwerk, als Anpassung zu bestimmtem Zweck."

There are many instances, however, where the connection between ritual and myth is of a more intimate nature. The Blackfoot myth of the Beaver Bundle, quoted above, which forms the pattern for a series of other ritualistic myths, may serve as an example. "In most ceremonies," writes Wissler, "the origin of the ritual is regarded as the result of a personal relation between its first owner and its supernatural giver; each ceremony or demonstration of the ritual being a

[1] Boas 2, pp. 662–664; 3, p. 126.

[2] Maximilian, II, pp. 184–186, 230–234. The tale without ritualistic associations occurs among the Assiniboin, Arapaho, Grosventre, Crows, Omaha, and Arikara. See Lowie 1, p. 181.

reproduction of this formal transfer."[1] This notion is so strongly developed among the Hidatsa that, whenever one of my informants was unable to recount the vision through which knowledge of a particular ceremony was derived, he at once suggested that the ceremony must be of foreign origin. Substantially there is no difference between the origin myths and the accounts by men still living of such visions as explain the institution of recent ceremonies: both recount the meeting with the visitant, his ceremonial gifts, and relevant instructions. The only difference lies in the fact that stories of the first class have already, while those of the second class have not yet, become part of the traditional lore of the tribe, or clan, or society. Again, the secondary character of the myth is at once manifest: no tribe could develop a story explaining ceremonial details (any more than an individual could have a vision of such ritualistic proceedings), unless such ceremonial features already formed part of the tribal consciousness. The myth simply recites the pre-existing ritual, and projects it into the past.

There is, of course, nothing in the nature of human psychology that would prevent myths from being dramatized in ceremony. It is simply an empirical fact that in North America such dramatization, if not wholly absent, is certainly subordinate in importance to the ætiological utilization of the myth. The Midewiwin ceremony does not dramatize the doings of Mänäbush and his brother; but the celebrants recite the story and add to it an account of the origin of their own doings. The Omaha Shell Society interpret the ceremonial shooting practised by members as a dramatic representation of the shooting of four children in the Origin Myth; but, as Radin has shown,[2] the shooting ceremony is so widespread a feature in other tribes, that it cannot have originated from this particular tale. The Okipa performers do not enact their tale of a flood, but use that tale as a partial explanation of their annual festival. A secondary reflex effect of the myth on the ritual and its symbolism is of course undeniable. Thus in the Okipa we do find an actor impersonating the mythic hero Númak-máxana; but, while the actor narrates the tale

[1] Wissler 1, p. 13.

[2] Radin 1, p. 182.

of the flood, he does not, so far as we can judge, perform the actions of his prototype at the time of the flood or on any other occasion. Similarly, among the Hidatsa, the hero-trickster figures in many ceremonial performances; but he does not act out his heroic or clownish exploits.[1] Again, among the Bellacoola, the kūsiut ceremonial appears to the native mind as a dramatic representation of legendary happenings. As a matter of fact, we do meet with impersonations of the deities of the Bellacoola pantheon; but the essential elements of the ceremonial, such as the cannibalistic practices, have an origin, not in the highly specialized Bellacoola mythology, but in actual observances shared in recent times by a number of Northwest coast tribes, and connected in part with war customs.

So among the Hopi the episodes of the legends associated with ceremonials do not determine at all definitely the sequence of ceremonial procedure; here also the ritual appears as a less variable and as a pre-existing feature.[2] Finally may be mentioned the Mohave case. Here the ceremonies not connected with mourning "consist essentially of long series of songs, occupying one or more nights in the recital, which recount, in part directly but more often by allusion, an important myth. At times the myth is actually related in the intervals between the songs. In some cases, dancing by men or women accompanies the singing; but this is never spectacular, and in many cases is entirely lacking."[3] But, though the prominence of the myth is here so great that the ceremonies in question are only ceremonial recitations of myths, this very fact obviously precludes dramatization of the mythic incidents.

DIFFUSION OF CEREMONIALS

In the Plains area, the diffusion of ceremonies is in some cases not merely a plausible hypothesis, but an historical fact. No one could doubt that the Hot Dance of the Arikara, Ruptare Mandan, and Hidatsa (involving in each instance the plunging of the performers' arms into scalding hot water), must have been derived from a common

[1] Pepper and Wilson, p. 320; and field-notes by the present writer.
[2] Fewkes 2, pp. 253 *et seq.*
[3] Kroeber 3, p. 340

source. But we have in addition Maximilian's assurance that the ceremony was obtained by the Hidatsa from the Arikara.[1] Lewis and Clark (1804) mention ceremonial foolhardiness as a feature borrowed by the Dakota from the Crows.[2] Within the memory of middle-aged men at least, two ceremonies have been introduced into the northern Plains from the south. The peyote cult, which is found among the Tepehuane, Huichol, and Tarahumare of Mexico, flourishes among the Kiowa and Comanche, and has thence traveled northward to the Arapaho, and even to the Winnebago.[3] The Grass Dance was introduced among the Crows by the Hidatsa about 1878; among the Blackfeet by the Grosventre, about 1883; among the Flathead by the Piegan, in quite recent times.[4] It seems to have originated among the Omaha and cognate tribes, including the Ponca, Osage, Iowa, and Oto.[5] In addition to the tribes already mentioned, its occurrence has been noted among the Pawnee, Dakota, and Assiniboin. Other unexceptionable instances are numerous. Thus a Medicine Pipe Dance of the Pawnee *hako* type was adopted by the Crows from the Hidatsa during the second half of the nineteenth century; and the Hidatsa remember that their Medicine Pipe ceremony was in turn derived from the Arikara. A sacred Horse Dance practised by the River Crows was secured from the Assiniboin. The same division of the Crows adopted a Crazy Dog Society from the Hidatsa about thirty-five years ago. To pass to another area, the Kwakiutl proper ascribe the origin of their cannibalistic ceremonial to the Heiltsuk, from whom they derived the practice in approximately 1835; while the Tsimshian derive a corresponding custom from the same source, whence it reached them probably ten years before.[6] While native tradition is often untrustworthy, the date set by it in these instances is so recent that scepticism is hardly in place. This is especially true, since linguistic evidence supports the account of the Indians; for practically all the names applied to the Tsimshian performances are derived

[1] Maximilian, II, p. 144.
[2] Lewis and Clark, I, p. 130.
[3] Kroeber 1, p. 320; Handbook; Radin 2.
[4] Lowie 2, p. 200; Wissler 4, p. 451.
[5] Fletcher and La Flesche, p. 459.
[6] Boas 2, p. 664.

from the Kwakiutl, and the characteristic cry of the cannibal is likewise a Kwakiutl word.[1]

The foregoing instances, which could be considerably multiplied, illustrate diffusion as an observed or recollected historical phenomenon. Even in the absence of such direct evidence, however, the theory of diffusion is in many cases inevitable. Among the graded ceremonies of the Grosventre, the lowest is a Fly Dance, which is said to have been instituted by a Mosquito; the members imitated mosquitoes, pursuing people and pricking them with spines and claws. The lowest of the graded Blackfeet ceremonies recorded by Maximilian in the early thirties of the nineteenth century was likewise practised by a Mosquito Society, whose members imitated mosquitoes, maltreating their fellow-tribesmen with eagle-claw wristlets.[2] The coincidence is so complete in this instance, that a common origin is certain, especially since the Blackfeet and Grosventre have been in intimate contact with each other, and since the only other people known to have had a Mosquito ceremony, the Sarsi, have also been closely associated with the Blackfeet. In the case at hand, we are even able to go a step farther, and ascertain not merely the fact, but the direction, of the diffusion process. The Grosventre are linguistically most closely allied with the Arapaho, with whom they once lived, and whose ceremonial system presents striking resemblances to their own. The presence of a Mosquito Dance among the Grosventre constitutes one of the glaring disparities amidst otherwise far-reaching likenesses: we may therefore reasonably infer that the difference resulted from the adoption of the Blackfeet Mosquito Dance by the Grosventre subsequent to their separation from the Arapaho.

In other cases we must be content to infer the mere fact of diffusion from the observed homologies. For example, the Arapaho and Cheyenne have each a Dog organization with four scarf-wearing officers pledged to bravery, and characterized by the same ceremonial regalia, such as dew-claw rattles, feather head-dresses, and eagle-bone whistles. The union of these logically quite unrelated features in adjoining tribes establishes beyond doubt a common origin; but I am not

[1] Ibid., p. 652.

[2] Lowie 1, p. 82.

acquainted with any specific data that would indicate whether the Arapaho borrowed from the Cheyenne, or *vice versa*. Cases of this type are exceedingly common in every one of the principal culture areas; and where similarities extend beyond the confines of these conventional provinces, or beyond a linguistic stock that more or less coincides with a cultural group, the fact of transmission is emphasized by the type of distribution found. Thus the shooting of a magical object with intent to stun candidates for initiation into the Midewiwin Society occurs among the Central Algonkin. In one form or another, this shooting is also a feature of societies among several Siouan tribes; but these are precisely those tribes which have been in close contact with the Central Algonkin — the eastern Dakota, southern Siouan, and Winnebago. The Sun Dance offers another case in point. This ceremony is found among the majority of Plains tribes, but has also been celebrated by several divisions of the Shoshonean stock, who properly belong, not to the Plains, but to the Plateau area. Here, again, the type of distribution is such as might be expected on the theory of diffusion: of the Shoshoni proper, the Lemhi did not practise the Sun Dance, but it is still performed at Wind River and Fort Hall, where the Shoshoni come more in contact with Plains peoples.

The fact of diffusion must, then, be regarded as established; and the very great extent to which ceremonials have travelled from tribe to tribe, coupled with undoubted diffusion of other cultural elements in North America, indicates that, while the process has been greatly accelerated by improved methods of transportation and other circumstances promoting intertribal intercourse, it must have been active prior to these modern conditions due to white influence.

The next problem is, How have ceremonial features been diffused? Plausible answers to this question seem relatively easy. Ceremonial regalia were often carried in war, and might readily be imitated, or snatched away from the enemy, and thus become a ceremonial feature of a new tribe. Among the Kwakiutl and their cognates, alien dance regalia were often secured by killing the owner.[1] During meetings of friendly tribes, dances were sometimes performed for the entertainment of the visitors, who might thus learn a new ceremony. It was

[1] Boas 2, pp. 424–431.

in this way that the River Crows came to have their Muddy Mouth performance.[1] Wherever a ceremony was considered (as frequently happened) a form of property, the right to perform it was naturally transferable to an alien who paid the customary amount of goods. Thus the Hidatsa secured the Hot Dance from the Arikara by purchase.

Before going further, we must be clear as to what is really transmitted through the agencies suggested. For example, the method of acquiring certain regalia through killing the owner does not account for the diffusion of the ceremony itself which these regalia symbolize. Take an instance cited by Boas. The Matilpe had not been permitted by the other tribes to acquire the Cannibal performer's regalia. At one time their village was approached by a party of men and women from the northern tribes, one of the men wearing the badge of the Cannibal order. Two Matilpe youths killed the strangers, and one of them assumed the Cannibal's cedar-bark ornaments, and at once began to utter the characteristic Cannibal cry, "for now he had the right to use the dance owned by the man whom he had killed." It is clear that the knowledge of the performance preceded the acquisition of the badge. In the native mind, to be sure, the Cannibal Dance was a form of property that could be acquired by killing the owner; and before its acquisition it did not, from the native point of view, form part of the Matilpe culture. But in reality, of course, it did form part of that culture; for otherwise the attitude of the Matilpe, both before and after the murder, would be impossible. The essential problem involved is, not how the Matilpe secured the symbols of the ceremony (however important these may appear to the native mind), but how the Matilpe came to participate in the knowledge of the ceremonial. The murder did not effect simple bodily introduction of a new ceremony, but only bodily introduction of new ceremonial badges, which were fitted into their customary ceremonial associations through prior knowledge of the ceremonial complex to which they belong.

It is, however, quite intelligible how such knowledge spread to the Matilpe through simple attendance as onlookers at performances of other tribes, for in that capacity they were hardly in a different position from the uninitiated spectators who belonged to the tribe of

[1] Lowie 2, pp. 197 *et seq.*

the performers. Whether an observed ceremonial routine is actually imitated (as in the case of the Muddy Mouth Dance of the River Crows), or remains unexecuted, contingent on fulfilment of requirements due to existing property concepts, is, from the point of view of diffusion, relatively unimportant. The point is, that not only tangible articles, but even an objective series of acts, songs, etc., may readily spread from tribe to tribe. In Australia it has been proved that ceremonies travel in various directions, like articles of exchange, and that frequently "a tribe will learn and sing by rote whole corrobborees in a language absolutely remote from its own, and not one word of which the audience or performers can understand the meaning of."[1] Illustrations of similar forms of borrowing are not lacking in North America. Thus the Winnebago chant Sauk songs during their Medicine Dance; and the music of songs is readily passed on from tribe to tribe, as in the case of the Grass Dance.

When there is esoteric ceremonial knowledge, the process of transmission implies, of course, far more intimate contact. Here the borrowing individuals or groups must be treated, for purposes of initiation, as though they belonged to the tribe from which the knowledge is obtained. The Arikara trick of plunging one's arm into scalding hot water without injury could not be imitated by the Hidatsa on the basis of mere observation; instruction must be *bought*, as it would be bought by an Arikara novice from an Arikara adept. Through similarly close personal contact, the Medicine Pipe ceremony spread from individual Arikara to individual Hidatsa, and from individual Hidatsa to individual Crows.

To sum up: transmission of external features, such as ceremonial paraphernalia, is possible on the basis of superficial, possibly even hostile, meetings; friendly intertribal gatherings render possible the borrowing of ceremonial routine, songs, and the like, in short, of the exoteric phases of the complex; while initiation into the inner meaning of a ceremony becomes feasible only through the closest form of personal contact.

Nevertheless the problem of diffusion is still far from being ex-

[1] Roth, Ethnological Studies among the North-West-Central Queensland Aborigines, p. 117.

hausted. Even where a ceremony seems to be bodily transferred, it may become different because of the differences in culture between the borrowing and transmitting tribes; that is to say, even an entire ceremony is not an isolated unit within the culture of the tribe performing it, but has definite relations to other ceremonies and to the tribal culture generally. Even tribes sharing in large measure the same mode of life tend to diverge as regards specific conceptions of social and ceremonial procedure. The "same" ceremony may thus enter different associations, and in so far forth become different through its novel relations. There can be no doubt that the Tlingit and Haida potlatches represent a single cultural phenomenon. Nevertheless there is a remarkable disparity between the associations of the great potlatches of these tribes. Among the Haida, the main festival was conducted by a chief in behalf of his own moiety, and was intended only to enhance his social standing. The Tlingit performed a potlatch for the benefit of the complementary moiety and for the sole avowed purpose of showing respect for the dead.[1] This illustration is instructive, because it embodies both types of changes that a transmitted ceremony undergoes, — a change in objective relations, which, however, cannot in many instances fail to affect the subjective attitude of the performers or borrowing tribe at large; and a change of the ostensible object, of the theoretical *raison d'être*, of the performance. These types of changes had best be considered separately. I shall approach the primarily objective alterations undergone by a borrowed ceremony through a consideration of the specific tribal patterns for ceremonial activity; and I shall consider the changes of avowed *raison d'être* in diffused ceremonies in the section dealing in a general way with the ends sought through ceremonial performances.

To avoid misunderstanding, it must be noted that by no means all changes of diffused ceremonies can be brought under these two heads. This is best seen when comparing the established variations in the performance of the same ceremony by local subdivisions of the same tribe. Thus we find that in some Haida towns the Grizzly Bear spirit inspired only women, while in others there was no such restriction.[2]

[1] Swanton 2, pp. 434 *et seq.*; 1, pp. 155 *et seq.*, 162.

[2] Swanton 1, p. 171.

The River Crows adopted the Crazy Dog Dance from the Hidatsa without assimilating it to the old Crow dances, while the Mountain Crows at once assimilated it to the rivalry concept of their Fox and Lumpwood organizations.[1] The unique historical conditions upon which such changes of borrowed ceremonies depend are not different in type from those which determine modifications in an indigenous ceremony, and are in neither case amenable to generalized treatment.

CEREMONIAL PATTERNS

Among the Arapaho the seven ceremonies distinctive of the age-societies, as well as the Sun Dance, are performed only as the result of a pledge made to avert danger or death.[2] The dances of the Kwakiutl, differing in other respects, resemble one another in the turns about the fireplace made by entering dancers; paraphernalia of essentially similar type (head-rings, neck-rings, masks, whistles) figure in Kwakiutl performances otherwise distinct; and the object of apparently every Kwakiutl society's winter ceremonial is "to bring back the youth who is supposed to stay with the supernatural being who is the protector of his society, and then, when he has returned in a state of ecstasy, to exorcise the spirit which possesses him and to restore him from his holy madness."[3] Among the Hidatsa the right to each of a considerable number of esoteric rituals must be bought from one's father: in each case the requisite ritualistic articles were supplied by a clansman of the buyer's father; a "singer" conducted the ceremonies; the purchaser received the ceremonial bundle, not directly, but through his wife; and so forth.[4] All important bundle ceremonies of the Blackfeet require a sweat-lodge performance; in nearly all rituals the songs are sung by sevens; for almost every bundle some vegetable is burned on a special altar; and every ritual consists essentially of a narrative of its origin, one or more songs, the opening of the bundle, and dancing, praying, and singing over its contents.[5]

[1] Lowie 2, p. 148.
[2] Kroeber 1, pp. 158, 196.
[3] Boas 2, pp. 43 *et seq.*
[4] Writer's field notes.
[5] Wissler 2, pp. 257, 271, 254, 101, 251.

It would be manifestly absurd to assume that the notion of performing ceremonies to ward off death originated eight times independently among the Arapaho; that the originators of the Kwakiutl Cannibal ceremonial and the originators of the Kwakiutl Ghost Dance independently conceived the notion of wearing neck-rings;[1] and so forth. Wissler has forcibly brought out the point that among the Blackfeet the Beaver Bundle owners seem to have established a pattern of ceremonial routine that has been copied by the owners of other bundles; and many additional illustrations could be cited to prove that, in every tribe with a highly developed ceremonial system, a corresponding pattern has developed. The psychology of this development has been felicitously compared by Goldenweiser with the process of borrowing ideas from an alien tribe: in both cases a novel idea is suggested, and may be rejected, or partly or wholly assimilated.[2] Whenever such an idea is generally adopted within a tribe, it tends to assume the character of a norm that determines and restricts subsequent thought and conduct. The Plains Indian generally ascribes any unusual achievement, not to personal merit, but to the blessing of a supernatural visitant; hence he interprets the invention of the phonograph in accordance with this norm. Among the Hidatsa it is customary to give presents to a father's clansman; hence an Hidatsa purchasing admission into an age-society selected from among the group of sellers a member of his father's clan. The notion at the bottom of the norm originates, of course, not as the notion of a norm, but like all other thoughts that arise in individual consciousness; its adoption by other members of the social group is what creates the pattern. We cannot, without tautology, generalize as to the type of concept that will become a model; indeed, we have found that, in two different bands of the same tribe, an already established concept may in the one case assimilate an alien introduction, and in the other capriciously fail to exert any influence on it. All that we can say is, that patterns exist, and are one of the most active forces in shaping specific cultures.

From the point of view here assumed, a problem that might otherwise arise in the study of North American ceremonialism, and has

[1] Boas 2, in which compare figs. 81, 147.

[2] Goldenweiser, p. 287.

already been touched upon, assumes a somewhat different aspect. Finding a very complex ceremonial system in certain parts of the continent, in the absence of such a system in others we might be tempted to ascribe the difference to a psychological difference between the respective tribes. In some measure, to be sure, extensive diffusion of cultural elements in some areas as compared with others would account for the observed phenomenon. If at one time the tribes of the Northwest coast or the Plains, taken singly, possessed a ceremonial culture as simple as that of California or the Plateaus, but spread their respective ceremonials among other tribes of the same area whose ceremonials they in turn adopted, then complexity might ensue without any cause other than conditions favorable for cultural dissemination. On the other hand, the purely internal action of the pattern principle would suffice to produce a corresponding complexity. The Crows have a Tobacco order composed in recent decades of perhaps a dozen or more distinct branches or societies, all sharing the right to plant sacred tobacco, and differing only in the specific regalia, and instructions imparted to the founders in the visions or other experiences from which the branches are derived. Visions of similar type are not lacking among such a tribe as the Shoshoni; but in the absence of an integrating pattern they have not become assimilated to a ceremonial norm. A Crow who belonged to the Tobacco order, and stumbled across a nest of curiously shaped eggs, would form an Egg chapter of the Tobacco order; a Shoshoni might experience precisely the same thrill under like conditions, but the same psychological experience could not possibly result in the same cultural epiphenomenon. The several Tobacco societies of the Crow do not represent so many original ideas, but are merely variations of the same theme. There is, then, only one basic idea that the Crow have and the Shoshoni have not, — the idea of an *organization* exercising certain ceremonial prerogatives, for the ceremonial features in themselves are of a type probably not foreign to any North American group. The complexity of the socio-ceremonial life of the Crows is thus an illusion due to the fact that this single idea became a pattern.

The pattern principle is also of the greatest value in illuminating the precise happenings during the process of diffusion. It has been

shown in another section, that a borrowed ceremony, even when bodily adopted, becomes different, because it originally bore definite relations to other cultural features of the transmitting tribe; and, unless these additional features happen to exist in the borrowing group, the same unit must assume a different cultural fringe. What happens in many, perhaps in the majority of, such cases, is, that the borrowed elements are fitted into conformity with the pattern of the borrowing tribe. Thus the Dog Society of the Crows is traced back to the Hidatsa. But among the Hidatsa this ceremonial body is one of a graded series of military societies in which it occupies a definite position; and entrance into it, as in the case of the rest, is a matter of purchase. Since the Crows neither grade their military organizations nor exact an entrance fee in any of them, the Dog Society naturally lost the impress of the Hidatsa mold so far as these features were concerned. Moreover, it was made over to fit the Crow scheme. Entrance into the society was, as for all other Crow military societies, either a matter of choice, or, more commonly, was stimulated by the desire of members to have the place of a deceased member filled by a relative. Again, while police duties among the Hidatsa were the exclusive right of the Black-mouth Society, the Crow organizations all took turns at exercising this social function, the Dog Society among the rest. Thus the Dog Society with all its ceremonial correlates came to enter quite new combinations and to assume a specifically Crow aspect.[1]

To Radin we are indebted for a suggestive investigation of the mechanism of ceremonial borrowing with special reference to the selective and assimilative influences exerted by the recipient culture on the borrowed features. The peyote cult, a very recent importation from Oklahoma, has rapidly risen to a most important position in the life of the Nebraska Winnebago. A detailed study indicates that the only really new thing introduced was the peyote itself, its ceremonial eating, and its effects. Several Christian elements that enter into the present Winnebago performance prove to be similar to pre-existing aboriginal concepts, so as to suggest that their acceptance was due to this conformity. The founder of the Winnebago cult seems to have at once placed the new plant in the category of medicinal herbs, and

[1] Lowie 3, p. 70; 2, p. 155.

accordingly to have associated with it the traditional shamanistic ideas. The organization of the new society automatically conformed to the Winnebago norm. The origin narrative developed by one of the converts "assumed all the characteristics of a Winnebago fasting experience and ritualistic myth, similar to those connected with the founders of the old Winnebago cult societies. In its totality, the atmosphere of the peyote cult became thus highly charged with the old Winnebago background." [1]

THE OBJECT OF CEREMONIES

Speaking of the Mandan Okipa, Catlin recognizes three "distinct and ostensible objects for which it was held:" it was an annual commemoration of the subsidence of the deluge; it was an occasion for the performance of the Bull Dance, which caused the coming of buffalo herds; and it was conducted in order to inure young men to physical hardship, and enable the spectators to judge of their hardihood.[2] The diversity of these alleged objects suffices of itself to suggest that the Okipa is a *complex* performance; that it would be vain to try to account for its origin by a simple psychological explanation. It is *a priori* psychologically conceivable that the Okipa (that is, an annual four-days' summer festival) originated as a celebration commemorative of the mythical flood, however improbable this may appear from our considerations of "Myth and Ritual;" but, if so, the conception that it was intended to attract the buffalo and the conception that it was an ordeal for the young men were secondary. Or we may assume that the ordeal concept was primary; then the two other alleged functions were secondary. And a corresponding conclusion seems inevitable if we suppose that the enticing of the buffalo was the original motive for the festival. In a more acceptable form, this theory might be stated as assuming that three originally independent ceremonies performed for diverse ends somehow became welded together into what then became the Okipa.

Before going further, it will be well to demonstrate that the complexity of the ceremony is an historical fact. This becomes at once

[1] Radin 2.

[2] Catlin, p. 9.

obvious when we consider the distribution of two of our three hypothetical elements. The buffalo-calling ceremony is by no means a peculiarity of the Mandan Okipa, but a ceremony very widely diffused over the Plains area: indeed, a buffalo-calling ceremony not differing in principle from that of the Okipa was performed by the Mandan themselves independently of the Okipa;[1] and a ceremony undertaken for the same ostensible purpose and with corresponding mimetic features was practised by the Mandan White Buffalo Cow Society.[2] What is true of the buffalo-calling feature applies with even greater force to the voluntary self-torture element. This appears with all its characteristic details — such as piercing of the breasts, insertion of skewers, suspension from a pole, and dragging of buffalo-skulls — not only in the Sun Dance of various tribes (where there is a collective torture strictly comparable to that of the Okipa), but also among the Dakota, Crows, and other Plains peoples, as a fairly normal procedure in the individual quest for supernatural aid.[3] That the buffalo-calling ceremony and the specific self-torturing practices under discussion were at one time independent of each other, and of whatever other features they are combined with in the Okipa, must be considered an established fact: indeed, the complexity is greater than the theory here discussed would indicate. To mention but one conspicuous feature, a great deal of time is consumed in the Okipa with dances by mummers impersonating animals and closely mimicking their appearance and actions. The performances are objectively, in a rough way, comparable to the Bull Dance, but have nothing to do with any solicitude for the food supply, since many of the beings represented are not game animals. These animal dances rather suggest the dream-cult celebrations of the Dakota, especially as the performers chanted sacred songs distinctive of their parts, and taught only on initiation and payment of heavy fees.[4] The mimetic animal dance thus forms an additional element of the Okipa complex.

The complex character of the ceremony is thus an historical fact.

[1] Maximilian, II, pp. 181, 264 *et seq.*

[2] Lowie 2, pp. 346–354.

[3] Dorsey, J. O., pp. 436 *et seq.*

[4] Catlin, pp. 19 *et seq.*; Maximilian, II, p. 178.

How, then, shall we interpret the equally certain fact, that, to the native consciousness, it appeared as a unified performance instituted by the mythical hero Nűmak-máxana,[1] and celebrated, if not for the specific reasons assigned by Catlin, from the vaguer motive of promoting the tribal welfare in general?[2]

We shall not go far wrong in putting the alleged *raison d'être* of the Okipa in the same psychological category with ritualistic myths. As the myth is an ætiological afterthought associated with a pre-existing rite, so the alleged object of a complex ceremony may be merely an afterthought engrafted on a pre-existing aggregation of ceremonial elements. In the one case it is the ætiological, in the other the teleological, feature that welds together disparate units, and creates the illusion of a synthetized articulated whole. If the hero Nűmak-máxana ordered the Mandan to practise a particular combination of un-unified observances, these performances become unified by that mythical fiat; and the causal requirements of the native, at the stage when rationalization sets in, are satisfied. At this stage the teleological point of view naturally serves the same purpose: in practice, in fact, it largely coincides with the ætiological attitude. If Nűmak-máxana instituted the annual festival, he did so for the purpose of benefiting the Mandan, and dereliction would spell tribal disaster. On the other hand, if the ceremony insures the commonweal, no further cause for its performance is required.

The principle here illustrated by the Okipa may be demonstrated in even more satisfactory fashion for the Sun Dance of the Plains tribes. Whatever may be the avowed purpose of this performance, certain elements are practically uniform throughout the area; for example, the selection and felling of a tree treated as an enemy, the erection of a preparatory and a main lodge, and a several-days' fast culminating (except among the Kiowa) in torture proceedings of the Okipa type. The Sun Dance of the Crows was performed exclusively in order to secure vengeance for the slaying of a tribesman; among the western Algonquian tribes it was vowed in the hope of delivering the pledger or his family from sickness or danger; while benefits of a vaguer and

[1] Maximilian, II, p. 172.

[2] Curtis, V, p. 26.

more public character were expected by the western Dakota, Hidatsa, and Kiowa.[1] In view of this diversity of ends sought, we cannot associate the ceremonial routine defined above with *any* of the ostensible objects of the Sun Dance; for in all cases but one the object *must* be secondary, and, from an argument analogous to that used in the consideration of "Myth and Ritual," the residual case appears amenable to the same psychological interpretation. In other words, the ostensible motive of complex ceremonies is not the genuine or original motive, but embodies merely the present native *theory* of the reason for the performance.

Several questions naturally arise: If we cannot directly interpret a complex ceremony, can we not at least give a psychological interpretation of its components? further, if we can resolve it into such constituents, how must we conceive the process by which originally unrelated elements became joined together (as we have assumed) through historical accident, to be integrated only at a later stage by some rationalistic synthesis? and, finally, if the native theory is merely an interesting speculative misinterpretation of native psychology, what is the present psychological correlate of those complicated series of observances under discussion?

Let us consider first of all the second question. Analysis resolves a ceremony into a number of disparate elements; how did these ever become joined together? We are here confronted by the problem of secondary association, a large topic to which only a few words can be devoted in this article. In the first place, we should beware of confounding logical with historical analysis. Two features may be not only logically as distinct as musical pitch and timbre, but also as inseparable in reality. This principle has already been expressed by Dr Radin, though his illustration rather shows how apparently unrelated concepts are nevertheless logically related in the native mind. The notion of a society derived from a water-spirit and the notion of curing disease are apparently distinct; but, if the water-spirit is always associated with the granting of medical knowledge, a vision of the water-spirit and the acquisition of medical skill coincide. Thus,

[1] Dorsey, G. A., 1, pp. 5 *et seq.*; 2, p. 58. McClintock, p. 170; Kroeber 2, p. 251; Scott, p. 347; Dorsey, J. O., p. 451.

whatever may be the development of the conception entertained regarding the water-spirit, the association between the idea of a society based on a supernatural communication by that spirit and the idea of doctoring is primary.[1] Here the initial disparity of the elements found in combination proves to be apparent, being merely due to our ignorance of the *tertium quid*. A primary *ceremonial*[2] association of genuinely distinct and ceremonially indifferent objects may be achieved through their juxtaposition in a vision, as illustrated by many medicine bundles. Thus, a jackrabbit-skin and a bunch of eagle-feathers may together form an ultimate unit of ceremonial stock-in-trade.

Let us now turn to cases of association of elements once existing apart. One cause of secondary association has already been touched upon. Wherever a particular ceremonial concept becomes the predominant one, it tends to assimilate all sorts of other concepts originally independent of it: thus, in the Crow example of the Tobacco societies and in the case of the Blackfeet Beaver Bundle, which has not only become the pattern for other bundles, but has even absorbed such rituals as the Sun Dance and Tobacco ceremony.[3] Among the Crows, individual visions by members of the Tobacco order have led to the association of quite heterogeneous features. A Tobacco member who chanced upon curiously-shaped eggs would found an Egg chapter of the order, and initiate new members into it, thus bringing about a connection between egg medicine and the sacred Tobacco; and in corresponding fashion have developed the Weasel, Otter, Strawberry, and other divisions.

In these cases it would seem that the notion of sacredness or ceremonialism is so strongly associated with a particular content that has become the ceremonial pattern, that any new experience of corresponding character is not merely brought under the same category as the pattern, but becomes an illustration, an adjunct of the pattern concept. In many other instances, a ceremony may bring about conditions normally associated with certain activities in no way connected

[1] Radin 1, pp. 193, 196. The point seems to me to be closely related to that repeatedly made by Lévy-Bruhl in his Les Fonctions mentales dans les sociétés inférieures, with reference to "participation."

[2] Otherwise, of course, the association is secondary.

[3] Wissler 2, p. 220.

with the ceremony itself; and, when these conditions arise in the course of the ceremony, they act as a cue to the performance of the normally associated activities. There is no connection between initiation into a society privileged to plant tobacco for the tribal welfare and the recounting of an individual's war-record; nevertheless, in the Crow Tobacco adoption, the entrance into the adoption lodge is uniformly followed by such a recital. The reason is fairly clear. At every festive gathering of the Crows there is a recital of war-deeds; the Tobacco initiation produces such a gathering, which elicits the customary concomitant; and thus the coup-recital becomes a feature of the Tobacco adoption ceremony. Similarly, every Iroquois festival seems to have been preceded by a general confession of sins.[1] Still another way by which heterogeneous ceremonial activities or features become associated is, of course, by purchase. The Hidatsa Stone-Hammer Society, according to Maximilian, bought the Hot Dance from the Arikara. But the Stone-Hammers had a ceremony of their own prior to the purchase, which was thus associated with the newly acquired fire-dance and the plunging of arms into hot water.

These few suggestions must suffice to indicate how disparate elements may become secondarily associated.

So far as the interpretation of the single elements is concerned, there is relatively little difficulty. Though we may not be able to comprehend the ultimate origin of a certain mode of ceremonial behavior, we can generally apperceive it as typical of a certain tribe or a certain group of tribes. The fact that the Plains Indians went to fast in a lonely place, looking for a supernatural revelation, may remain an irreducible datum; but, when we disengage from the Crow Sun Dance complex the attempt to secure a vision that is given as its ultimate motive, we at once bring it under the familiar heading of "vision-quest." So we may not know how "four" came to be the mystic number of many tribes; but it is intelligible that, where it is the mystic number, dances, songs, processions, and what not, should figure in sets of four. Prayers, dances, sleight-of-hand performances, the practice of sympathetic or imitative magic, etc., are likewise ultimate facts; but

[1] Morgan, p. 187.

their special forms in ceremonies of which they are part are readily classified with corresponding psychological manifestations.

But the social setting of the cultural elements enumerated during a ceremony cannot fail to lend them a color they otherwise lack. The pledger of the Crow Sun Dance, who sets in motion the tremendous machinery required for the communal undertaking, and is thenceforth subjected to tribal scrutiny, cannot be supposed to be in the same psychological condition as if he were merely seeking a vision in the seclusion of a four-nights' vigil on a mountain-top. What we find in any complex performance of this type, then, is a number of distinct acts with distinct psychological correlates, integrated, not by any rational bond, but by the ceremonial atmosphere that colors them all.

From this point of view the question, What may be the object or psychological foundation of a ceremony? becomes meaningless. The psychological attitude is not uniform for the performers of a ceremony: it is not the same for the Sun Dance pledger (who wishes to compass an enemy's death) and the self-torturing vision-seekers in quest of martial glory. Much less is it the same for the pledger and the self-advertising reciters and enactors of war-exploits or the philandering couples hauling the lodge-poles. But is not the attitude of the pledger the essential thing? To assume this customary view is the surest way to miss the nature of ceremonialism. A Crow Sun Dance pledger wishes to effect the death of an enemy; a Cheyenne Sun Dance pledger wishes to insure the recovery of a sick relative. Why must both have, say, a dramatic onslaught on a tree symbolizing an enemy? From the rationalistic point of view here criticized, the answer is not obvious. It would be in perfect accord with the Plains Indian mode of action for the Crow and Cheyenne simply to retire into solitude and secure a vision bringing about the desired result. If they are not content with this, and require an elaborate ceremonial procedure, that procedure must have an additional *raison d'être*. The absence of intelligible object (from the *native* rationalistic point of view no less than from our own) in a ceremonial feature becomes at once clear, if we regard its very performance as self-sufficient, as gratifying certain specific non-utilitarian demands of the community. View it not as primitive religion, or as a primitive attempt to coerce the forces

of nature, but as a free show, and the mystification ceases: ceremonialism is recognized as existing for ceremonialism's sake.

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RELIGION OF THE NORTH AMERICAN INDIANS

By PAUL RADIN

INTRODUCTION

THERE are always two factors to be considered in religion, — first, a specific feeling; and, secondly, certain beliefs, conceptions, customs, and acts associated with this feeling. Of these beliefs, perhaps the one most inextricably connected with the specific feeling is that in spirits, who are conceived of as more powerful than man, and as controlling all those elements in life on which he lays stress. These two component elements of religion may be regarded either as having always been associated and thus forming an inseparable whole, or the one as having preceded the other in time.

These beliefs play an important rôle with all people, but the importance of the specific feeling varies with each individual. The less intense the feeling, the greater, on the whole, will be the value attached to the beliefs, and the stricter will be the punctilious performance of custom and observance. The reverse is not true, however, for the greatest intensity of feeling is frequently known to accompany the observance of customs. Beliefs and customs, as such, contain no religious element. They belong to that large body of folkloristic elements toward which the individual and the group assume an attitude of passive acceptance. What makes certain of these beliefs part of the religious complex is their association with the specific religious feeling. It does not matter with what degree this feeling is held, or whether it is held by all the members of the group.

Religious feeling, however, is not a simple unit. It is accompanied by certain muscular responses, — the folding of the hands, the bowing of the head, the closing of the eyes; in short, by all external signs of mental and emotional concentration. Now, whether these various activities invariably condition religious feeling, and therefore constitute this state of mind, or *vice versâ*, is a problem for the psychologists to

determine; but this much is true, that these various activities, performed at certain propitious times, do actually call forth religious feeling. On the other hand, we know that the folding of the hands and similar actions have become so entirely dissociated from religious feeling, that they are little better than stereotyped formulæ unaccompanied by the slightest thrill.

The discussion of the muscular responses accompanying religious feeling has brought us to a crucial question: Does the association of such muscular responses as have become stereotyped acts with certain beliefs, customs, etc., constitute the religious complex? I do not see how we can possibly deny the term "religion" to it; for the stereotyped acts were primarily associated with religious feeling, and only secondarily became dissociated. In other words, we shall in this case have to consider as a religious complex a complex in which one of the essential elements — the specific religious feeling — may be absent.

Let us now turn to an examination of the specific religious feeling. What I should call religious feeling is a far more than normal sensitiveness to certain beliefs, conceptions, and customs, that manifests itself in a thrill, a feeling of exhilaration, exaltation, awe, and in a complete absorption in internal sensations. Negatively it is characterized by a complete abeyance of external impressions. As a feeling, I should imagine that it differs very little from other feelings, such as the æsthetic or even the joy of living. What distinguishes it from them is the fact that it is called forth by entirely different elements.

A pure religious feeling is, however, exceedingly rare; for from the nature of the folkloristic background with which it has been associated, and from the nature of the rôle it plays in primitive man's life, it has become assimilated with almost all the other feelings possessed by man. With certain individuals, religious feeling may on almost all occasions dwarf other feelings; but with the vast majority of men and women it is but one among others, rising at times to a position of predominance, and more frequently being entirely displaced. Often it is artificial in the extreme to attempt any separation.

Let us now inquire into the nature of those beliefs, conceptions, and customs that have become part of the religious complex.

A cursory glance at the religious beliefs of peoples shows that almost

any belief or custom can and has at different times become associated with religious feeling. This can be explained in only one way, — by regarding religion, not as a phenomenon apart and distinct from mundane life, not as a philosophical inquiry into the nature of being or as a group of concepts and acts that spring from the relation of the individual to the outer world, but, broadly speaking, as one of the most important and distinctive means of maintaining life-values. As these vary, so will the religious complex vary. In other words, religion will only emphasize and preserve those values that are accepted by the majority of the group at any given time. Religion is thus closely connected with the whole life of man; and only when other means of emphasizing and maintaining life-values are in the ascendant, does it become divorced from the corporate life of the community. This divorce has never taken place among primitive man, and religion consequently permeates every phase of his culture. It does not, however, permeate every phase equally, with the same intensity, or with the same permanency; and in this variability lies, it seems to me, the possibility of discussing religion apart from all other aspects of the life of a group, as well as the possibility of separating the religion of one people from that of another.

In the midst of the variability of life-values, three stand out prominently and tenaciously; and they are success, happiness, and long life. In the same way there stands out, from the heterogeneous mass of beliefs, the belief in spirits who bestow success, happiness, and long life. These life-values are in no way inherently connected with the spirits, and may, we know, be obtained in another way; for instance, by magical rites. Our constant element is consequently the life-values. The association of these values with spirits may justifiably be regarded as secondary, and not as necessarily flowing from the nature of the spirit as originally conceived. Is it not, then, emphatically putting the cart before the horse to contend that "religion springs from the relation of the individual to the outer world (i.e., the spirits)?" Is it not just the converse that is true, that religion springs from the relation of the spirits to the life-values of man? In North America I am certain that this is the case.

While religion is thus concerned primarily with the important life-

values of man, in stressing these it has been compelled, perforce, to include with them (because they form so important and integral a part of man's life) a large and variegated assortment of his folkloristic-magical background; and while the individual's attitude toward these is on the whole one of passivity, in their new setting there are occasions on which the religious feeling becomes diffused over these folkloristic-magical elements too.

If religion is thus so intimately connected with the stressing of life-values, it is essential to inquire carefully into the personnel of its carriers and the gradations of their religious intensity.

From the nature of religious feeling, it is quite evident that no one can be in this state continuously. In some individuals, however, it can be called up easily. These are the truly religious people. They are always few in number. From these to the totally unreligious person the gradations are numerous. If we were to arrange these gradations in the order of their religious intensity, we should have as the most important the following: the truly religious, the intermittently religious, and the indifferently religious. The intermittently religious really fall into two groups, — those who may be weakly religious at most any moment; and those who may be strongly religious at certain moments, such as temperamental upheavals and crises. In the intermittently and indifferently religious are included by far the large majority of people; but, since so many extra-religious factors enter into their religious consciousness, they are really the most poorly adapted for the study of religion. To understand religion and its development we must study those individuals who possess religious feeling in a marked degree. I believe that much of the confusion that exists in so many analyses of religion is due to the fact, that, in so far as these analyses are based on the study of distinct individuals, the individuals selected belonged to the class of intermittently or abnormally religious. Starting, then, from the markedly religious person, we should study the intermittently and the indifferently religious with reference to him.

It is not enough to realize the division of people into the three religious groups we have enumerated above: we have also to know when their religious feeling is called forth. Apart from the degree of

religious susceptibility, we can legitimately claim that the members of all our three groups show a pronounced religious feeling at certain crises of life, and that these crises are intimately connected with all the important socio-economic life-values of the tribe, — puberty, sickness, death, famine, etc. The frequent existence on such occasions of temperamental upheavals is unquestionably a great aid in evoking a religious feeling. Whatever it be, however, it is during individual and tribal crises that the majority of men and women are possessed of what, in spite of other ingredients, is a religious thrill; and this religious thrill becomes instantaneously associated with definite beliefs, concepts, and customs, the most important of which is the belief in spirits and the necessity of their being brought into relation with man. There is nothing inherent in the religious thrill that would necessarily suggest an association with specific beliefs. That it does suggest them is due entirely to the influence of the early education the man has undergone.

It is, then, at crises that the majority of men obtain their purest religious feeling, because it is at such times only that they perhaps are most prone to permit inward feelings to dominate. It is only at crises, however, that the majority of men obtain a pure religious feeling at all. The markedly religious man is quite different. A certain temperamental susceptibility permits him to obtain a religious thrill on innumerable occasions; and since with each thrill are associated the specific religious beliefs, etc., he sees the entire content of life from a religious viewpoint. Life and its values as determined by his traditional background are, of course, primary; and the function religion assumes is that of emphasizing and maintaining these life-values. The intermittently and indifferently religious are taught and accept unhesitatingly, as far as they comprehend it, the religious complex of the religious. They assuredly rarely see life from a religious standpoint. There are occasions, however, in the corporate life of a community, — such as a ceremony or ritual, — where a religious feeling does at times seem to be diffused over the entire content of life. Certainly even the intermittently and indifferently religious who participate in these activities must partake somewhat of this feeling too. At a ceremony many of the conditions favorable

to the calling-forth of a religious feeling are given, — the presence of truly religious people and of acts and customs associated with religious feeling; the condition of detachment from the outer world; and, lastly, the very important fact that an individual has been taught to expect a religious thrill there.

Summing up, we may say that all people are spontaneously religious at crises; that markedly religious people are spontaneously religious on numerous other occasions; and that the intermittently and indifferently religious are secondarily religious on a number of occasions not connected with crises.

One of the most important points in the study of religion is to know where to begin the inquiry. It has been customary, whether we are conscious of this fact or not, to treat the subject as though each generation evolved its religion anew. We admit the inheritance of the cultural background in theory, but make no use of it in practice. The general impression conveyed by the discussions is that to each generation the problems of religion present themselves for solution. This lack of correspondence between theory and practice seems to me due to the fact that we do not begin our investigations at some definite point in the concrete data at our disposal. It is absolutely essential, however, to have a starting-point; and there is, it seems to me, only one logical and historical starting-point, namely, the relation of a youth to the preceding generation in the persons of his immediate family. If we know what an individual, in the formative years of his life, has learned of the objective and subjective content of religion from his immediate relatives, and how the latter have moulded his religious nature, we are on firm ground.

In the transmission of the religious complex, two important points are to be considered, — first that from the nature of the age at which youths are generally taught the objective contents of religion, which embraces the years from ten to fourteen, all individuals must begin with an attitude of unhesitating acceptance of their traditional background, with all its implications; and, secondly, that the appearance of religious feeling is subsequent to the acquisition of that mass of beliefs, concepts, and customs, with which in adult life it is inextricably interwoven. In the emotionally formative period of life, the individual

is taught the socio-economic importance of being religious; and what becomes the traditional religious background in later life, becomes endeared to him in earlier life for reasons extraneous to religion, — through family ties and affection, through personal ambition, etc. He obtains all this before he has experienced any intense religious emotion. If, consequently, we wish to understand the religious complex, we shall have to bear in mind clearly the historical order of development of its component elements and stresses.

Before entering on the discussion of North American religion proper, a few words on the relation of magic and religion may not be out of place.

The distinction which we wish to make between religion and magic is a very simple one. It is concerned principally with the nature of the subjective attitude. In religion this attitude is positive and definite; while in magic it is negative and indefinite, and may be said to consist mainly in the feeling that certain facts will occur together. The objective content of religion and magic, while differing in many ways, is frequently the same. The resemblances are due, in my opinion, to two facts, — first, because religion and magic are primarily concerned with the same things, namely, the maintenance of life-values (although here the range of magic is more restricted than that of religion); and, secondly, because quite a number of the elements that form a part of the magical complex have become secondarily included in the religious complex.

CRITIQUE OF SOURCES

Religion has never been made a special subject of inquiry in North America; and practically all the accessible data are to be found in the general accounts of tribes, in mythologies, and in specific studies of ceremonies. However, even in the best of the studies at our disposal, what is specifically dealt with is not religion in its entirety, but religious practices and observances. The nature of religious feeling and its rôle have rarely been dwelt upon, except in connection with the discussion of the concept of magical power (*orenda*, *wakanda*, *manito*, etc.). Frequently, too, even in the best descriptions of the religion of a certain tribe, we are at a loss to know whether it is the

Indian's viewpoint that is given, or an ethnologist's conception of that viewpoint. Even when we have satisfied ourselves that we are essentially dealing with an Indian's viewpoint, we rarely know what Indian's viewpoint, — whether it is the shaman's or the layman's, that of a religious or of an essentially unreligious person.

The raw material for the study of the subjective side of religion is given to a certain extent in the myths, especially in the ritualistic myths. These are generally merely personal religious experiences cast in a literary mould. They naturally leave much to be desired. One of the ideal methods for acquiring data relating to the subjective side of religion is to obtain "spiritual" autobiographies. These are not difficult to obtain in many parts of North America, owing to the not uncommon use of modern syllabic alphabets. In addition, great emphasis should be placed on securing verbatim, or at least approximately complete, accounts of speeches given at ceremonies or on other occasions of a religious nature, for they often throw an admirably clear light on the subjective aspects of our subject.

Unfortunately, in addition to certain defects in the nature of our available material, we have to reckon with a serious gap in our knowledge of certain tribes. This is conspicuously true for the interior Athapascan tribes, for many of the tribes included in the Plateau area, for almost all the Shoshonean, and for a large number of the Southeastern tribes. For the Southeastern area a large mass of material has recently been collected by Dr. Swanton, but it still awaits publication. A peculiar condition exists with regard to the data on the Southwest. While our published sources of information are by no means small, with the exception of the Navajo, Pawnee, and Hopi material, it is presented in such a confused way that it is frequently extremely difficult to use.

METHOD OF EXPOSITION

The difficulties in the way of an adequate presentation of so complex a phenomenon as religion are well known. For purposes of description it is necessary to separate our subject into a number of definite, often enough artificial units; and yet it is essential to hold these units together in a close nexus. At the same time, to treat

religion statically is manifestly one-sided, and likely to lead to many misinterpretations. It is, then, at all times necessary to bear in mind that we are dealing with a dynamic phenomenon. Finally, we must remember that we are dealing with an historical group, and that we must endeavor, even in spite of our unfortunate lack of historical sources, to utilize those contemporary sources in our possession in such a way that the religious complex as a whole, and the religious conceptions, beliefs, and customs in particular, are interpreted in the light of their probable development.

For the reasons given above, it has seemed best to present our whole subject under certain headings suggested by our definition of religion. We shall accordingly treat religion under the following topics:[1]—

Introductory: Religion as a shamanistic interpretation.

I. The specifically religious concepts.
   1. The concept of supernatural power.
   2. The concept of spirits.
   3. The power and localization of spirits.
   4. The development of spirits into deities.
   5. Monotheism.

II. The relation of spirits to man.
   1. The twofold interpretation of this relation.
   2. Guardian spirits.

III. The methods of bringing spirits into relation with man.
   1. Fasting.
   2. "Mental concentration."
   3. Self-castigation and torture.
   4. Offerings and sacrifices.
   5. Prayers and incantations.
   6. Charms and fetiches.

[1] It might be well to state that the writer is personally acquainted with two tribes, — the Winnebago and the Ojibwa. His analysis of religion naturally started with data secured from them.

IV. The folkloristic-religious complex.

1. The concept of evil.
2. The concept of disease.
3. The concept of death, after-life, and re-incarnation.
4. The concept of the soul.

V. The transmission of the religious complex.

INTRODUCTORY: RELIGION AS A SHAMANISTIC INTERPRETATION

Among the North American Indians emphasis was naturally laid upon different aspects of life in different parts of the country. The purely hunting and fishing tribes, with a loose social and ceremonial organization, were bound to have a religious complex quite distinct in certain ways from that of the Plains Indians or the agricultural and sedentary tribes of the Southeast and Southwest. Throughout America, as in other parts of the world, man has always asked for two things, — success and long life. The kind of success he desired would naturally depend upon what, in his culture, was considered of value, and also upon individual temperament. Man was accordingly to conduct himself in the manner which would conform best to the conditions necessary for the attainment of his specific life-values. These conditions were more or less precisely given by the preceding generation as interpreted by the elders of that generation. From the point of view of the elders, a man's life might be separated into a number of divisions of prime significance both to the community and to the individual. These are birth, adolescence, old age, death, future life, etc. To what extent these different periods of life are religiously as well as socially emphasized, varies with different tribes.

In the life of the individual, irrespective of any observance associated with these periods, certain events will take place at the age of adolescence and early manhood, for instance, around which a religious feeling clusters. These events are generally of two kinds, — one that might be called positive, and one negative. As illustrations of the first kind might be given such events as the first killing of a food-animal or the first killing of an enemy, the acquisition of a new name,

the first enjoyment of products of the field, etc. As illustrations of the second kind might be given such occurrences as lack of success in one's undertakings, the presence of dilemmas and crises, where the question arises, "What am I to do?" It is at this point that the religious feeling arises most easily and is felt most deeply, according to the available data at our disposal. It is quite natural that it should, for it is on such occasions that there exist a pronounced desire for success and a willingness to put one's self in a condition by which success may be achieved. According to the theory of the shamans, complete absorption in the religious feeling is the essential requirement; but with this essential requirement there has come to be associated, through an historical growth directed by the shaman, a belief in spirits more powerful than man, who control success.

The predication of the religious feeling as essential to success, and the association of this feeling with spirits who are also conceived of as essential to success, flow neither from the nature of the feeling nor from that of the spirits. In North America, at least, it is a theory and an interpretation of the religious man, the shaman. I do not mean to imply that the shaman has necessarily established this association; but it seems highly probable that he has analyzed the entire complex, and has given an interpretation of the relation of the religious feeling to success in life and to the belief in spirits. This interpretation is accepted uncritically and unhesitatingly by the other members of the tribe.

How thoroughly concerned this theory is with the accentuation and preservation of specific life-values, is made plain by the following excerpt from the Winnebago system of instructions: —

"My son, when you grow up, you should try to be of some benefit to your fellowmen. There is only one way in which this can be done, and that is to fast. . . . If you thirst yourself to death, the spirits who are in control of wars will bless you. . . . But, my son, if you do not fast repeatedly, it will be all in vain that you inflict sufferings upon yourself. Blessings are not obtained except by making the proper offerings to the spirits, and by putting yourself, time and again, in the proper mental condition. . . . If you do not obtain a spirit to strengthen you, you will amount to nothing in the estimation of your fellowmen, and they will show you little respect.

. . . My son, as you travel along life's path, you will find many narrow passages [i. e., crises], and you can never tell when you will come to them. Try to anticipate these, so that you will be endowed with sufficient strength [by obtaining powers from the spirits] to pass safely through these narrow passages."

Certainly we have here a markedly materialistic conception quite in contrast to the formulation of the relation of God to man in the Semitic religions. In the latter religions man is admonished to put himself in an attitude of thankfulness and veneration for the deity who has created him and this world. In the religion of the Indians, even where the idea of creation is markedly developed, there is no trace of any such attitude. Prayers and offerings are not made to the spirits in order to glorify them: they are made in order to obtain something very definite; and, as we shall see, the blessings they bestow are not made because of their love of mankind, but because they have received offerings. In theory they may at times refuse these offerings, but in practice this rarely happens. Having once accepted the offerings, the spirits must grant man the powers they possess. They practically become automatons, and their relation to man becomes mechanical.

So much for the formulation of the shamanistic theory. Let us turn now to the presentation and examination of the specifically religious concepts with which the shaman deals.

I. THE SPECIFICALLY RELIGIOUS CONCEPTS

1. The Concept of Supernatural Power. — In North America the shamanistic theory is a purely animistic one. The main characteristics of the spirits or spiritual beings which the theory predicates is that the spirits are non-human and more powerful than man. The question as to whether they are anthropomorphic or not seems to be of comparatively small consequence. When seen or conceived of as acting, there is unquestionably a well-marked tendency to describe them either as anthropomorphic or as theromorphic beings. This is particularly true of those spirits who play a rôle in mythology. In spite of this, there is ample evidence to show that the Indians were very little interested in the form under which their spirits were

conceived, without, however, making them any the less definite. The lack of definiteness in form has led a number of ethnologists in America and elsewhere to postulate the existence, in America, of a "spirit-force" or magic power. Mr. J. N. B. Hewitt was perhaps the first to discuss it among the North American Indians, and his conclusions seemed to be corroborated by the studies of Miss Fletcher among the Omaha, and by those of William Jones among the Central Algonkin. Falling in, as it did, so admirably with conclusions that had been reached by a number of European ethnological theorists, in particular Mr. R. R. Marett, it soon obtained great currency. In the last expression on the religion of the Indians, that of Professor Boas,[1] it is assumed as fundamental.

Professor Boas says as follows: "The fundamental concept bearing on the religious life of the individual is the belief in the existence of magic power, which may influence the life of man, and which in turn may be influenced by human activity. In this sense magic power must be understood as the wonderful qualities which are believed to exist in objects, animals, men, spirits, or deities, and which are superior to the natural qualities of man. This idea of magic power is one of the fundamental concepts that occur among all Indian tribes. It is what is called *manito* by the Algonquian tribes; *wakanda*, by the Siouan tribes; *orenda*, by the Iroquois; *sulia*, by the Salish; *naualak*, by the Kwakiutl; and *tamanoas*, by the Chinook. Notwithstanding slight differences in the signification of these terms, the fundamental notion of all of them is that of a power inherent in the objects of nature which is more potent than the natural powers of man. . . . Since the belief in the existence of magic powers is very strong in the Indian mind, all his actions are regulated by the desire to retain the good will of those friendly to him, and to control those that are hostile."

The concept of magic power has assumed such prominence in discussions on American religion, that I feel justified in dwelling on it here in some detail, particularly as I wish to demonstrate that in the form in which it is generally presented it is quite untenable.

From Professor Boas's definition of magical power, one might infer

[1] "Religion," in Handbook of American Indians (Bureau of American Ethnology, Bulletin 30, Part 2).

at first that he is really dealing with an interpretation of magic. However, as he distinctly says that "man's actions are regulated by the desire to retain the good will of these powers," we shall have to assume that this power is identical with the "outer world" of his definition of religion.

The first question that suggests itself for discussion is, In what way is magical power related to spirits? According to Professor Boas, spirits represent the magic power of nature individualized; and the variation in the conception of spirits, that exists in different parts of America, is due to differences in the degree of individualization they have undergone. Where strong anthropomorphic individualization has occurred, we have deities; and where a belief in magic power that is vaguely localized is pronounced, we have the "concept of a deity or of a great spirit which is hardly anthropomorphic in character."

Miss Fletcher formulates her conception of magic power in a different way. According to her, "Wakonda . . . is the name given to the mysterious all-pervading and life-giving power to which certain anthropomorphic aspects are attributed," and "is also applied to objects or phenomena regarded as sacred or mysterious. These two uses of the word are never confused in the minds of the thoughtful. When during his fast the Omaha sings, '*Wakonda*, here needy he stands, and I am he!' his address is to 'the power that moves,' 'causes to move,' that is, gives life. . . . To the Omaha nothing is without life. . . . He projects his own consciousness upon all things, and ascribes to them experiences and characteristics with which he is familiar; there is to him something in common between all creatures and all natural forms, a something which brings them into existence and holds them intact; this something he conceives of as akin to his own conscious being. The power which thus brings to pass and holds all things in their living form he designates as *wakonda*. . . . *Wakonda* is invisible, and therefore allied to the idea of spirit. Objects seen in dreams or visions partake of the idea or nature of spirit, and when these objects speak to man in answer to his entreaty, the act is possible because of the power of *wakonda*, and the object, be it thundercloud, animal, or bird, seen and heard by the dreamer, may be spoken of by him as a *wakonda*, but he does not mean that they are *wakonda*. The

association in which the term *wakonda* is used determines the character of its meaning. *Wakonda*, the power addressed during the fast, . . . is not the same *wakonda* as the thunder that speaks to a man in a dream is sometimes called; yet there is a relation between the two, not unlike that signified by the term *wakondagi* when applied to the first manifestation of an ability; for all power, whether shown in the thunder-storm, the hurricane, the animals, or man, is of *wakonda*."[1]

I think it is quite plain from the above that Miss Fletcher is not dealing with power at all, but with a kind of Semitic deity conceived of inconsistently, sometimes as an all-pervading principle of life, sometimes as a definite spirit.

Still another interpretation is that given by Mr. Hewitt in the discussion of the Iroquoian *orenda*. According to him, *Orenda* is a "magic power which was assumed . . . to be inherent in every body . . . and in every personified attribute, property, or activity. . . . This hypothetic principle was conceived to be immaterial, occult, impersonal, mysterious in mode of action. . . . The possession of orenda . . . is the distinctive characteristic of all the gods, and these gods in earlier time were all the bodies and beings of nature in any manner affecting the weal or woe of man."[2]

Mr. Hewitt, in another article,[3] tells us that "primitive man interpreted the activities of nature to be the ceaseless struggle of one orenda against another, uttered and directed by the beings or bodies of his environment, the former possessing orenda, and the latter, life, mind, and orenda, only by virtue of his own imputation. . . . In the stress of life coming into contact with certain bodies of his environment more frequently than with the other environing bodies, and learning from these constraining relations to feel that these bodies, through the exercise of their orenda, controlled the conditions of his welfare and in like manner shaped his ill-fare, he came gradually to regard these bodies as the masters, the gods, of his environment, whose

[1] Article "Wakonda" (Handbook of American Indians, Bureau of American Ethnology, Bulletin 30, Part 2).

[2] "Orenda" (Handbook of American Indians, Bureau of American Ethnology Bulletin, 30, Part 2).

[3] "Orenda and a Definition of Religion" (American Anthropologist, N. S., vol. iv).

aid, goodwill, and even existence were absolutely necessary to his well-being and his preservation of life itself. . . . And the story of the operations of orenda becomes the history of the gods."

Mr. Hewitt claims to base his conclusions on an analysis of a large number of phrases in which the expression "*orenda*" is found; but any one who will take the trouble to examine these expressions, and to compare the translation he gives with the interpretation of the translation, can see at a glance that he is illegitimately extending the meaning of these words. The conclusions are palpably not based on his analysis of these words; but, on the contrary, the analysis of the words is based on a certain concept of *orenda* that is held.

Let us see what is at the bottom of this concept of *orenda*. I believe this is to be found in the phrase, "the possession of *orenda* is the distinctive characteristic of all the gods." The gods have been separated into beings plus magical powers, and it has then been forgotten that they belong together and cannot be treated as though they were independent of each other. It seems to me, however, that the error lies in the separation itself. What warrant have we for thinking of the god as a deity plus power, and not merely as a powerful deity? Are we not here really at the bottom of the whole matter? And are we not committing the old error of confusing an adjective with a noun? I think there is no doubt of it. Mr. Hewitt, in fact, has presented us, not with certain facts, but with an interpretation of facts. What the facts themselves are, we have no means of determining from his data.

Dr. Jones's conception of the *manito*[1] is essentially the same as Mr. Hewitt's conception of the *orenda*. To him the *manito* "is an unsystematic belief in a cosmic, mysterious property, which is believed to exist everywhere in nature. . . . The conception of this something wavers between that of a communicable property, that of a mobile, invisible substance, and that of a latent transferable energy; . . . this substance, property, or energy is conceived as being widely diffused amongst natural objects and human beings; . . . the presence of it is promptly assigned as the explanation of any unusual power or efficacy which any object or person is found to possess; . . . it is a distinct and rather abstract conception of a diffused, all-pervasive,

[1] "The Algonkin Manitou" (Journal of American Folk-Lore, vol. xviii).

invisible, manipulable, and transferable life-energy, or universal force. . . . [Finally] all success, strength, or prosperity is conceived to depend upon the possession of [this force]."

Dr. Jones, like Mr. Hewitt and, as we shall see, Dr. Swanton, lays considerable stress upon language, "as affording means of approaching nearer to a definition of this religious sentiment." He says, "When they [the Indians] refer to the manitou in the sense of a virtue, a property, an abstraction, they employ the form expressive of inanimate gender. When the manitou becomes associated with an object, then the gender becomes less definite." Jones here seems to accept the assumption that grammatical distinctions correspond to pyschological ones. It is clear, however, quite apart from the general incorrectness of this assumption, that the gender of Algonkin words depends frequently on analogy. We do not know with what words "manitou" is used in an "inanimate" sense; and until we do, and have been able to satisfy ourselves that these words have not become inanimate through analogy, Jones's linguistic argument lends no corroboration to his contentions.

Although I am firmly convinced that such use of the linguistic data as Jones, Swanton, and in the main Hewitt, have made, is both illegitimate and futile, there is no gainsaying the fact that a discussion and an examination of the roots used in describing religious concepts may prove of great importance.

Let us now, before summing up, pass to Dr. Swanton's view of supernatural power. He seems to rely entirely upon the linguistic argument, interpreting language likewise, in the same manner as Dr. Jones. "Most Indian languages,"[1] he says, "at any rate the Tlingit, do not have a true plural, but usually a distributive and occasionally a collective. *This means that instead of thinking of so many different objects, they think of one diffused into many.* Therefore they do not divide the universe arbitrarily into so many different quarters ruled by so many supernatural beings. On the contrary, supernatural power impresses them as a vast immensity, one in kind and impersonal, inscrutable as to its nature, but wherever manifesting itself to men

[1] J. R. Swanton, "Condition, Beliefs and Linguistic Relationships of the Tlingit Indians" (26th Annual Report of the Bureau of American Ethnology, p. 451, note).

taking a personal and it might be said a human personal form in whatever object it displays itself. Thus the sky-spirit is the ocean of supernatural energy as it manifests itself in the sky, the sea-spirit as it manifests itself in the sea. . . . It is not meant that the Tlingit consciously reasons this out thus or formulates a unity in the supernatural, but such appears to be his unexpressed feeling. For this reason there is but one name for this spiritual power, *yēk*, a name which is affixed to any specific personal manifestation of it, and it is to this perception or feeling reduced to personality that the great-spirit idea seems usually to have affixed itself."

I think that it is apparent, from the quotations given above, that in no case are we dealing with a clear presentation of certain facts, but with interpretations. The facts themselves are rarely given as such, and, when they are given, are so closely bound up with the specific interpretation advanced, that they can be used only with the greatest caution. If we were dealing with a general analysis of religion from a logical or metaphysical standpoint, perhaps all that would be required would be the inner consistency of the explanation advanced; but we are not concerned with that. All that we wish to know are certain facts and the Indians' interpretation of them, and this our authorities on magical power have signally failed to give us. Quite apart, therefore, from the fact that there is abundant evidence to show that they have generally approached the subject from a preconceived European metaphysical viewpoint (whether they have done this consciously or not is immaterial), the premises of which it is legitimate to examine, we are compelled to reject their data because they have confused interpretations with facts.

However, I do not wish to rest my rejection of a belief in magical power, as presented by the writers quoted above, on this negative evidence. I was fortunate enough to work among the Winnebago and Ojibwa, where the belief in *wakanda* and *manito* is strongly and characteristically developed. In both tribes the term always referred to definite spirits, not necessarily definite in shape. If at a vapor-bath the steam is regarded as *wakanda* or *manito*, it is because it is a spirit transformed into steam for the time being; if an arrow is possessed of specific virtues, it is because a spirit has either trans-

formed himself into the arrow or because he is temporarily dwelling in it; and, finally, if tobacco is offered to a peculiarly-shaped object, it is because either this object belongs to a spirit, or a spirit is residing in it. The terms "*wakanda*" and "*manito*" are often used in the sense of "sacred." If a Winnebago tells you that a certain thing is *waka* (i.e., sacred), further inquiry will elicit from him the information that it is so because it belongs to a spirit, was given by a spirit, or was in some way connected with a spirit. It is possible that Dr. Jones, Miss Fletcher, and Mr. Hewitt interpreted a certain vagueness in the answer, or a certain inability (or unwillingness) to discuss objects that were regarded as *manito* or *wakanda*, as pertaining to the nature of sacred. In addition to the connotation of "sacred," *wakanda* and *manito* also have the meaning "strange," "remarkable," "wonderful," "unusual," and "powerful," without, however, having the slightest suggestion of "inherent power," but having the ordinary sense of those adjectives.

Is it not possible, however, that the idea of a force inherent in the universe may have been developed by shamanistic systematization? It is possible; but no data pointing to this exist, as far as I know, in North America. In some cases the shamans have thought away all the personal characteristics; but an "unpersonal" unit still exists, set off against other "unpersonal" units. This is not magical power; for, according to our authorities, it is not divisible, but forms one unit. Even if, finally, we were to interpret *wakanda* and *manito* as in the nature of a *tertium quid*, that the personal characteristics were not thought away from them, but that they never possessed them, the individuality of each *tertium quid* would still prevent it from corresponding to magical power.

We may say, then, that from an examination of the data customarily relied upon as proof, and from individual data obtained, there is nothing to justify the postulation of a belief in a universal force in North America. Magical power as an "essence" existing apart and separate from a definite spirit, is, we believe, an unjustified assumption, an abstraction created by investigators.[1]

[1] In the discussion of the nature of the spirits, a number of points come out, of considerable importance in connection with the notion of supernatural power, and to this readers are referred.

There is another way in which we may look upon the idea of a universal force, and that is to regard it as the unconscious expression of the religious emotion itself. It should be looked upon, in other words, as the non-individualized feeling of fear, awe, etc., which forms the subjective side of religion. It is this, perhaps, upon which Jones insists in certain passages of his essay. From this point of view, the answer given by an Indian to any question presupposes a certain amount of reflection on his part, and cannot, therefore, be regarded as a true expression of the religious emotion. If, consequently, by "force" we wish to designate simply the religious emotion as such, no issue need be taken with the concept. However, this is not what the majority of theorists mean by the term. Quite apart from this consideration, are we justified in separating the religious emotion from its associated historical elements? And does not the admittedly individual object or happening which becomes associated with the religious emotion, in a way, individualize the entire complex? It is of course well-nigh impossible to determine this satisfactorily; but it seems to me that the individual, in the vast majority of cases, does not content himself with the mere pleasure of "swimming" in a vague religious emotion, but almost mechanically individualizes the emotion by reference to the facts he has been taught.

2. The Concept of Spirits. — Animism, then, in the old Tylorian sense of the term, is the belief of the Indians. What, however, is the nature of these spirits with which animism deals? It has frequently been urged that spirits must of necessity be conceived of in a vague manner by the majority of Indians; but this seems to me an entirely erroneous view, due to lack of analysis of the answers received from direct questioning of the Indian. To those Indians who have never spent any time thinking upon the nature of spirits, the concept of spirit is neither vague nor definite, for they cannot really be said to have any concept at all. The question has really never presented itself to them. When, therefore, an ethnologist seeks by direct questioning to inquire into the nature of spirits from the ordinary lay Indian, he is likely to obtain an answer (in those cases where he obtains an answer at all) prompted by a moment's consideration. Such an answer no more reflects the true conception of spirits than a reply

concerning the Holy Ghost, obtained under the same conditions, from an illiterate peasant, would reflect the Catholic belief on this subject. There is no reason for even supposing that such an answer reflects the same Indian's belief after he has given the subject some consideration. The vagueness present in our lay Indian's answer is consequently not an indication of vagueness in the conception of spirits, but is due to entirely different reasons. This distinction is of the utmost importance.

While, however, this ignorance as to the precise nature of the spirits, on the part of the ordinary man, is a fact to be borne in mind, to understand the Indian's conception of spirits, we must inquire principally from those who have thought upon the question, and who have inherited the thoughts of others upon this question, — the shamans. What has the shaman to say upon the nature of spirits? Are they anthropomorphic, theromorphic, dream-phantasms, or indefinite entities in general? Can we divide them into personal, impersonal, or unpersonal spirits? Right here, it seems to me, we are apt to make an unjustifiable assumption. Our ordinary division into personal and impersonal is made on the possession of corporeal characteristics, which are in turn dependent upon our sense-perceptions, — sight, hearing, touch, etc. Ordinarily, too, the presence or absence of corporeality is the test of its reality or unreality. What right have we, however, to assume that the Indian either makes the same classification or equates corporeality with reality, with existence? To judge from specific inquiries made among the Winnebago and Ojibwa, and from much of our data in general, reality does not depend necessarily upon sense-impressions. Among the Winnebago shamans, what is thought of, what is felt, what is spoken, is as real as what is seen or heard. It is, I believe, a fact that future investigations will thoroughly confirm, that the Indian does not make the separation into personal as contrasted with impersonal, corporeal with impersonal, in our sense at all. What he seems to be interested in is the question of existence, of reality; and everything that is perceived by the sense, thought of, felt and dreamt of, exists. It follows, consequently, that most of the problems connected with the nature of spirit as personal or impersonal do not exist.

Because, however, the Indian is thus essentially interested in the existence of things, it does not follow that he classifies the universe into that which exists and that which does not exist. Whatever is the object of his thoughts and his feelings exists. He does not concern himself with the negative aspects of existence. The questions with which he concerns himself, by preference, are those relating to the kind and the permanency of the existence of spirits. Far more important than these two questions, however, is the question relating to the authority for the existence of spirits.

Before entering into this discussion, a few words on the respective rôles of the shaman and the layman may not be out of place.

That the shaman works with the general folkloristic material on hand is self-evident. To a large extent, therefore, he must be regarded as a mere arranger and synthesizer. But he is also an interpreter and a theorizer; and in the exercise of these capacities he is only in part limited by the interpretations and theories known to the mass of the people. When we remember the special religious aptitude that characterizes the more capable of the shamans, it must be quite plain to us that he will actually invent new interpretations and new theories, and that his individuality will stamp itself indelibly upon the new syntheses he attempts. If we regard religion as the association of a religious emotion with certain concepts and folkloristic elements, then it is essential to realize exactly how the religious emotion may be extended to new folkloristic elements. It is just in this connection, it seems to me, that the rôle of the shaman shows itself. It is he that extends them.

If we survey the whole field of North America, we shall find that spirits are conceived of as being visible, audible, felt emotionally, or as manifesting their existence by some sign or result. They are all equally real. When visible, they may appear as human beings, animals, "mythological" animals, rocks, trees, fire, phantasms, etc.; when audible, it may be as a human voice, or as the voice of a bird, in the form of a song, in the whistling of the wind, the crackling of the fire; when manifesting their presence by a sign, it may be by lightning, by a cloud, by an object found, etc. How a spirit vouchsafes to manifest himself to an individual may to a certain extent vary with the

particular individual; for it probably depends upon the predominance of visual images in one case, and auditory images in another. However, in the vast majority of instances the particular manner of manifestation is given. As might be expected, a large number of spirits are believed to be visible to man.

A large number of spirits are distinctly and definitely corporeal. As such they may be definitely anthropomorphic, theromorphic, etc. We shall first examine the anthropomorphic spirits.

The North American Indians have peopled their universe with spirits, who may be defined, we have said, as being more powerful than and as real as man. The lay Indian, we have pointed out, does not concern himself with the nature or the shape of spirits at all. Both the lay Indian and the shaman, however, when speaking of spirits as directly related to the activities of man, must from the nature of the case have generally conceived him as acting similarly to the principal sentient beings with which he was mainly concerned, — man and animals. In general, these anthropomorphic characteristics would be vaguely defined; but when, owing to shamanistic activity, the powers and nature of spirits were more sharply drawn, then the spirits took upon themselves more definitely the shape of man or of some animal. Whether anthropomorphic, theromorphic, or indeterminate spirits predominate, varies in different parts of America. In the Northwest coast, the Plains, and the Southwest areas, anthropomorphic spirits largely predominate; while in the Woodland and Southeast areas they do not seem to be of any more importance than either the theromorphic or the indeterminate spirits. Among the Plateau Indians and those of the interior and northern Canada, indeterminate spirits are largely in the majority. Analyzing the distribution of anthropomorphic spirits, it seems fairly clear that they are most abundant in those areas in which a ritualistic organization is well developed. In the Woodland and Southeast areas, where this, and its invariable accompaniment shamanistic systematization, are found only in certain places, anthropomorphism plays only a moderately important rôle; whereas in the Northwest, on the Plains, and in the Southwest, where the ritualistic organization is complex, the converse is true.

Among the Pueblo Indians the anthropomorphic character of spirits

or deities has developed from the influence of two features, — one being the reconstructions of the shamans, which are analogous to what has taken place on the Northwest coast and the Plains; and the other being what might be called a "deification" of clan-ancestors. Dr. Fewkes speaks of the second feature as ancestor-worship. To him the katcina cult, for instance, is a phase of ancestor-worship; and the katcinas, "deified spirits of ancestors." In this he is followed by Mrs. Stevenson; but only by a peculiar, and to me illegitimate, extension of the concept ancestor-worship, is this true. As a matter of fact, what we are dealing with here is not ancestor-worship, but the not uncommon transformation of an heroic animal into a man who becomes the ancestor of the clan. This belief, so characteristically developed among the Winnebago, Sauk and Fox, and Omaha, has taken a different turn among the Hopi and other Pueblo tribes. Among the latter, the animal ancestry of the clan founder has been completely lost sight of, and consequently the katcinas seem to have taken upon themselves the nature of anthropomorphic beings or ancestors who were worshipped. That we are not dealing with deified ancestors comes out clearly from what Dr. Fewkes says about "animate" totems. "When the totems are inanimate, — as sun, water, lightning, corn, — the clan totem ancestors are likewise anthropomorphic, and their worship the central idea of the cult."[1]

It would be erroneous to imagine that the shaman has consistently or completely interpreted or systematized, or brought into harmony with itself, the vast magico-folkloristic background which forms, after all, the matrix of the religious complex. First of all, the task was far beyond his powers; and, secondly, this complex was changing continually as it passed through the hands of the lay Indian, and as new elements were added to it from the inexhaustible magico-folkloristic background. It is to this lack of complete systematization that is due at times the uncertainty as to the nature of spirits. We frequently do not know whether we are dealing with an anthropomorphic or a theromorphic spirit. As an example we might take the thunder-bird among the Winnebago. In the popular belief in the clan legends, it is always spoken of and depicted as a bird akin

[1] Journal of American Folk-Lore, vol. xi, pp. 173–194.

to the eagle. In the shamanistic religion the thunder-birds are theoretically bald-headed anthropomorphic beings. Frequently, however, although they are spoken of as men, they act as birds. Complete as has been the shamanistic transformation of the bird into a man, the spirit has still kept two of the old characteristics of the thunder-bird concept, — the baldness of the birds, and the flashing of the eyes as the cause of lightning.

In one other way did the shaman seem powerless to withstand the influence of the popular beliefs. When spirits of a definitely circumscribed type were developed, one of the first and most natural reactions to be expected was that the people would elevate to the rank of spirits those heroes and hero-buffoons so dear to the popular mind. The shamans, it would seem, fought against this tendency, to judge from the utter lack of unanimity regarding the status of these popular spirits in North America; but this did not prevent the raven among the Bellacoola, the hare, trickster, and turtle among the Winnebago, Wisaka among the Sauk and Fox, Nenebojo among the Ojibwa, etc., from becoming *bona fide* spirits. Upon their inclusion in the pantheon of spirits, the shaman did his best to obliterate their more grossly animal characteristics; and, though he could not change the animal form of many of these hero-spirits, he did succeed in making them either indeterminate or at least human animals.

Under the present discussion belongs properly also that of the High God, for he is generally conceived of as markedly anthropomorphic; but, owing to its importance, we shall discuss this conception separately.

If we except the heroic animals who have developed into spirits, theromorphic spirits are by no means common. There exists, however, another class of spirit characteristically developed among the Winnebago and kindred tribes, among the Ojibwa and Sauk and Fox, and among some of the Plains Indians, who is regarded as a spirit controlling the living species of animals. Among the Winnebago this spirit seems to possess no corporeality at all. He is a generalized, clarified animal. He, for example, it is who is the guardian spirit, not the specific animal. There is no doubt in my mind that this conception is largely, if not entirely, a shamanistic one. It plays an im-

portant part in Winnebago life, for it permits an individual to kill any animal without running the risk of killing either his guardian spirit or his clan animal. This spirit-animal is distinguished from, let us say, the anthropomorphized hare of the Winnebago Medicine Dance, in that he does not represent the gradual development of a benevolent spirit out of an heroic buffoon animal, but simply a newly-created abstraction of the shaman, based, it is true, on an animal prototype.

A large number of spirits are indeterminate in shape. The reasons for this seem to be, that the object with which the spirit is associated has no definite shape; that its shape, while definite, has been discarded; that they are creations of the popular fancy; or that, finally, they are in a more or less constant state of transformation.

To the first class belong such spirits as water, fire, light, wind, etc., on the one hand; and those spirits whose existence is made known by sounds or signs, on the other. Among the Winnebago, water is addressed as, "thou whose body is of water." Nothing more definite is ever given. For those spirits who manifest themselves only by sound and signs, I have definite information only from the Winnebago and Ojibwa, though there is reason to believe that they also exist among the other tribes belonging to the Woodland area and to the territory just west of it.

As to the nature of the identification of spirits with celestial objects, both shaman and lay Indian are at one; but a difference seems to exist in their interpretation of the identification with stones, trees, etc. The shaman seems to identify spirits with the latter objects, while the layman apparently conceives them to be inhabited by spirits.

The sun, moon, and stars are among the most important spirits in America. So closely, however, have they been identified with these particular bodies, that no systematic attempt seems to have been made to transform them into true anthropomorphic spirits. These celestial bodies belong everywhere to the older strata of beliefs, and were in many tribes displaced by the development, on the part of the shaman, of other spirits. Wherever shamanistic systematization was at its highest, — among the Bellacoola, Ojibwa, Winnebago, Pawnee, Pueblos, Iroquois, etc., — there we find evidence of a former marked prominence of the sun. In the popular mind, as evidenced by some of

the popular cults and the mythology, the sun always retained its prominence. Among the Natchez and in the civilizations of Mexico, the cult of the sun obtained so high a development that it displaced all others.

Monsters as spirits are found all over America. Perhaps the most characteristic of them all is the widespread Water-Spirit, also known as the Horned Snake and the Plumed Serpent. He unquestionably belongs to the old strata of beliefs, and, although adopted by the shaman everywhere, has undergone almost no recasting. Around his figure still cluster the whole mass of magico-folkloristic beliefs characteristic of the popular spirits. No attempt has been made to clarify this picture. He is always regarded as a more or less malign being, at war with the Thunder-Bird. It may be in consequence of this latter trait that he was so little appreciated by the shaman; for the Thunder-Bird is favored by the shaman and the people, and the old belief in the eternal enmity of the two beings must have meant the development of one at the expense of the other. Among the Winnebago a sort of rehabilitation and clarification of the Water-Spirit has taken place in connection with the origin legend of the Water-Spirit clan.

There is, however, another class of monster-spirits found in North America, whose origin does not lie so definitely in the popular folk-lore. As such we may cite the Eskimo Sedna and the Winnebago Disease-Giver. The latter is conceived of as human in shape, and as having his body divided into parts, one dealing out life, and the other death. This figure seems to me to be largely a development of the shaman, although it may be based on popular belief. According to the shaman, he is the cause of disease; but he has not succeeded in displacing the popular belief as to the cause of disease and death.

All of the spirits discussed are capable of taking an indefinite number of shapes. This power of transformation does not seem to be insisted upon as much by the shaman as by the lay Indian, due perhaps to their different standpoints. Naturally this power is possessed to its highest degree by spirits. But to the lay Indian the spirits are not merely beings from whom all blessings flow, but also heroes; and their infinite capacity for transformation is dwelt upon everlastingly as

proof of their superior power. To the shaman as religious systematizer the spirits partake of the nature of deities, and their hero character is less important. The task they have before them is to define, coordinate, and classify the spirits. Emphasis upon their powers of transformation is not conducive to this. In defining them in prayers, in ritualistic speeches, etc., their character and the mode of representing them became fixed, and this literary fixation led to standardization in certain areas. Where artistic representation also occurred, the standardization was even more prominent. We have, then, to consider all these interpretations, each of which is partially true, and each of which has historically influenced the other, in our conception of the nature and figure of spirits.

3. The Power and Localization of Spirits. — Spirits possess the power of bestowing upon man all those things that are of socio-economic value to him. These may vary from such very important things as success on the war-path or rain to the most insignificant trifles. Whether these powers are possessed collectively by a few spirits, or possessed singly by a large number, will be found to vary according to the degree of systematization the beliefs have undergone. Where this systematization is marked, the powers have become grouped together in the hands of a comparatively small number of spirits; and where this is not the case, the powers have been scattered over an enormous number. The same powers are frequently possessed by different spirits, due mainly to their number, their localization, and the influence of family groups and clans.

Historically the multiplicity of spirits may to a certain extent represent the influence of localization. As to the prevalence of the belief in the localization of spirits in North America, there can be little doubt. The prominence attached to the belief in "magic power" has obscured this fundamental conception. Any study of North-American religion based on mythology, ritualistic speeches, and personal experiences, will demonstrate this clearly. People are blessed by guardian spirits whose abode is a definite place in the near vicinity of their village, not by spirits who live somewhere in the universe. Among the Winnebago, the Ojibwa, the Omaha, there were as many spirits as there were lakes, hills, rivers, etc.; and each of these spirits

possessed practically the same powers. Among the Eskimo the same thing is true. According to Turner,[1] "every cove of the seashore, every point, island, and prominent rock, has its guardian spirit." Among the Takelma, according to Dr. Sapir, "a potent group of spirits are localized and associated with certain definite rocks, trees, or mountains. Direct offerings of food and other valuables seem often to have been deposited at the localities with which such beings were associated."[2] So thoroughly ingrown is, in fact, this localization in the popular mind, that the shamanistic systematization never made any real headway against it. Its spirit-deities never displaced the local genii, but at best were established at their side.

As in most other things, so here too there seems to be a difference between the lay Indian's conception of the powers associated with the spirits and the shaman's. The localized spirits are to the popular mind true *genii loci*, who are concerned not so much with granting power to man as with the protection of their respective precincts. The granting of powers to man is popularly believed to have been the work of the early culture-heroes. True, man never prayed to them for power; but then it had been given for all time when they transformed this world and made it habitable. If by offerings to the *genii loci* they could placate them and safely pass from place to place, then life was fairly secure. This apparent lack of positive relation of the *genii loci* to the socio-economic needs of man, I believe to have been the popular and earlier viewpoint.

Certain spirits — like the sun, moon, earth, stars, etc. — all belonging, according to our evidence, to the earlier strata of spirits, although they are of course not *genii loci* in the strict sense of the term, are looked upon, nevertheless, as being concerned with their own interests. Their own interests happen, however, to be of the utmost importance to man. Man's attitude toward them is sufficiently illustrated by the fact that he asks them not so much for power as for the continuance of their own strictly private functions. It is interesting to note that the same attitude, the main feature of which

[1] L. M. Turner, "The Hudson Bay Eskimo" (11th Annual Report of the Bureau of American Ethnology).

[2] E. Sapir, "The Religious Ideas of the Takelma Indians" (Journal of American Folk-Lore, vol. xx, p. 35).

seems to be a lack of direct relation to man's needs, is characteristic of the tricksters and transformers of North-American mythology.

The shaman's viewpoint is characteristically different. To judge from those areas where our information is sufficiently definite, in particular from the Winnebago and Ojibwa, the emphasis on the association of the power to grant man all his socio-economic needs with the realization of the direct relationship between the maintenance of these needs and the spirits, is almost exclusively the work of the shaman. The function of the *genii loci* was transformed, or, better, augmented. They still remained the guardians of their precincts, but, in addition, were regarded as the source of man's power throughout his life. The creative animal heroes had to give way to these newcomers as the original source of power, unless they were themselves elevated to the dignity of spirits.

Such are the two points of view prevalent in North America; and these should be carefully borne in mind if we wish to obtain a correct idea of the Indians' religion.

4. The Development of Spirits into Deities. — The conception of deities is quite clearly due to shamanistic systematization. From what were the deities developed? Doubtless to those ethnologists who believe firmly in the existence of a "magic power," the difference between spirits and deities is one of degree of individualization of the magic power. To me the facts seem to point toward a development in exactly the opposite direction. But to what are we to relate them, — to such spirits as sun, moon, stars; to the *genii loci;* or are we to regard them as new conceptions largely representing the reconstructions of the shaman? I believe an examination of the data points in all three directions.

Deities are found developed in practically all parts of North America, with the possible exception of interior and northern Canada and among the Plateau tribes. In certain sections — like the Northwest coast, the Plains Woodland, the Plains, California, the Southwest, and certain parts of the Eastern Woodlands — two types of deities are found; to wit, the trickster deity and the "pure" deity. The wide distribution of the trickster deity shows that it is not associated with any marked ritualistic development. To my mind it represents

the shaman's acknowledgment of the power of popular beliefs, and likewise an admission that he too shares many of them. His reconstructed trickster is generally more consistent as a creator, more directly and consciously benevolent, but his origin is indicated in a number of features. Indeed, it could not be otherwise; for the shaman's re-interpretation is never thorough and complete, and, no matter how clarified his conception may be, the people as such have never lost their conception of the trickster. What appears to me a probable reason for the lack of remodelling of the trickster deity, at least in certain portions of America, is the fact that the shaman has developed another deity in which he was more interested. The trickster was probably always forced upon him to a certain degree. In certain sections of the Northwest coast and California where the second type of deity is not well developed, the trickster deity retains less of his primeval character: as, for instance, the raven among the Tlingit, Haida, and the Asiatic Chukchee; and the coyote among the Mewan. Conversely, the trickster nature of the deity, or perhaps the influence of the trickster conception on the second type of deity, creeps out even when the deity has obtained so abstract a formulation as among the Chitimacha. Although he is spoken of here as "having neither eyes nor ears, but who sees, hears, and understands everything," he yet plays the rôle of trickster at the same time. One word of caution is necessary here: we may be dealing with information obtained from two sources, — the shamanistic and the popular.

Although, as we have pointed out before, the development of deities need not coincide with a marked development of ritualistic organization, it is frequently so associated; the Central Algonkin, some of the Eastern-Woodlands tribes, and California presenting a notable exception. This association is not due to the complexity of the ritual, but to the necessity of having founders and creators for the various rituals. These founders are for the most part trickster deities. Such, for instance, is the case with a number of the societies of the Northwest coast, the Winnebago, the Sauk and Fox, etc. We have thus two sources for the origin of the trickster deities, — the reconstructions of the individual shaman, and the desire of having a founder for a ritual or society.

The "pure" deities are quite clearly unrelated to the trickster or culture-hero. They may vary from such definite deities as the sun, moon, earth, star, etc., to such indefinite ones as the Great-Medicine of the Cheyenne, Olelbis ("Dwelling-on-High") and Namhliestawa ("Hurling-Left-Handed-to-the-West) of the Wintun, Shining-Heavens of the Haida, Tirawa of the Pawnee, Earth-Maker of the Winnebago, and the Good Spirit of the Ojibwa. Of these, certain ones (like the sun, etc.) belong, as we have seen, to the oldest possessions of the people; while the others seem at first glance to be largely reconstructions of the shamans, although, as we shall see later, this is only partially true. One difference between these two types appears fairly clear, — the sun, moon, etc., generally belong to a polytheistic phase in America, while the Great Medicine, etc., belong to a monotheistic phase. There are of course exceptions; such, for example, as the rôle of the sun among the Natchez, and that of Raven-at-the-Head-of-Nass among the Tlingit. The position of the former was due to the remarkable development of the sun cult among that people.

Let us examine the names of our deities more closely. Dwelling-on-High and Hurling-Left-Handed-to-the-West are descriptive terms from which nothing can be learned. The Good Spirit of the Ojibwa, we know, exists side by side with the Bad Spirit. Earth-Maker of the Winnebago is the only name that explains the function of the deity. This, however, is only one of his names. He is also known as the Creator and the Great Spirit. Like the Good Spirit of the Ojibwa, another spirit of equal rank appears in the mythology, called Herecgunina, corresponding exactly to the Ojibwa Bad Spirit.

The Shining-Heavens of the Haida represents, in my opinion, merely a transformed older spirit. Dr. Swanton says, "He (Shining-Heavens) is the sky god, the highest deity anciently recognized by the Haida."[1] He goes on to say, "Siñ, the name by which he is known, is the ordinary word for 'day,' as distinguished from 'night' or from an entire period of twenty-four hours which also is called 'night;' but it seems to be more strictly applied to the sky as it is illuminated by sunshine." This explanation is, I believe, far-fetched. Siñ is

[1] J. R. Swanton, Haida Texts and Myths (Bureau of American Ethnology, Bulletin 29, p. 30).

apparently identical with the Winnebago *hāp* and the Tciwere (Oto, Iowa and Missouri) *hape*, which means "day." There is also a very important deity by this name. Hą̄p, however, has two other secondary meanings, — that of "light air, heavens," and that of "life." In view of the remarkable correspondence of the Haida and Winnebago deities, may we not legitimately identify the two? Siñ would then simply be an old spirit deity who has been transformed into a supreme deity.

The names of these deities show clearly that we are to look for their origin neither in the older spirits (like sun, moon, etc.) nor in the *genii loci*. Where, then, are we to look? There seem to me to be three sources of origin, — the generic *genii loci*, the dual creators, and the shamanistic reconstructions.

Among the Tlingit we are told that there were "one principal and several subordinate spirits in everything." A similar conception exists among the Eskimo, the Asiatic Chukchee, the Winnebago, etc. What we find here is a localization of authority. There was at all times an inequality in the importance of the *genii loci*. The *genii loci* of the trees were subject to the *genius loci* of all the trees within a certain area, etc. This conception is quite similar to that of the spirit-animal mentioned before. We are not dealing here, however, with an abstraction for the purpose of subjecting a number of individual entities to some unifying principle, but clearly with generic *genii loci*. It is from this generic *genius loci* that, in my opinion, such deities as the Hard-Being-Woman of the Hopi, the Spider-Woman of the Pueblos, Sedna of the Eskimo, the Water-Spirit of the Winnebago, etc., were developed. All these deities have, of course, undergone considerable re-interpretation and clarification at the hands of the shaman.

Dual creators — or, better, dual transformers — are found in all parts of America. They are a common feature of all their mythologies. Frequently three, four, or five transformers are found, depending upon the sacred number of the tribe. Among the Winnebago, for instance, there are four. The dual creators are generally regarded as equal in power; but one is supposed to be more benevolent than another, and more directly interested in furthering the needs of man. In many

areas this antagonism in the character of the dual deities developed a marked Good Spirit and Bad Spirit. This is typical, for instance, of the Central Algonkin, Winnebago, Omaha, etc. This postulation of a Good Spirit and a Bad Spirit was not developed by the shaman. It seems to be one of the fundamental folkloristic conceptions of the North American Indians. The Good Spirit and Bad Spirit are merely the spirits-in-chief of the numerous good and bad spirits.

Let us see now what the shamanistic reconstructions have done with these dual deities. Where the systematization was very strong, — as, for instance, among the Pawnee and Winnebago, — the Bad Spirit has disappeared completely. Among the Winnebago he is still found, however, in the popular cycles. He has, it is true, degenerated into a sorry figure; but Earth-Maker confesses himself powerless to destroy him. Among the Pawnee, Tirawa reigns supreme; and there seem to be only hints as to the earlier existence of a rival.

5. Monotheism. — The belief in a single supreme deity is not very common in America. The nearest approach to it is Tirawa of the Pawnee. According to Mr. Grinnell, he is "an intangible spirit, omnipotent and beneficent. He pervades the universe and is its supreme ruler. Upon his will depends everything that happens. He can bring good or bad; can give success or failure. Everything rests with him. . . . Nothing is undertaken without a prayer to the Father for assistance. When the pipe is lighted the first whiffs are blown to the deity. When food is eaten, a small portion of it is placed on the ground as a sacrifice to him." [1] Such a conception is quite rare. If, however, we take the belief in a single God to mean the belief in a mildly benevolent creator, who may or may not be the creator of all deities and spirits, to whom offerings are made similar in nature to those made to the other spirits, the conception, though not common, is found among the Californian tribes, the Bellacoola, the Central Algonkin, the Woodland-Plains, some of the Plains, and some of the Southwestern tribes.

As to the origin of the idea of a single deity, there is little doubt in my mind that it is to be sought in the older belief in the Good Spirits and Bad Spirits, and probably represents the complete displacement of

[1] G. B. Grinnell, "Pawnee Mythology" (Journal of American Folk-Lore, vol. vi, p. 113).

the latter. The non-ritualistic myths and the popular beliefs bear this out amply. The single deity never seems to have become very popular. He was, for instance, rarely appealed to directly by the average man; and it is only by a *tour de force* that he appears as a guardian spirit. In fact, though based on a popular belief, he is a thoroughly shamanistic construction.

To what extent Christianity has influenced the development of the Good Spirit into a supreme deity, it is difficult to determine. Its influence must have been considerable in certain areas. However, as we have tried to show, it is not necessary to call in the aid of Christian influence to account for the origin of the idea of a single supreme deity.

II. THE RELATION OF SPIRITS TO MAN

1. The Twofold Interpretation of this Relation. — Among all North American tribes there is always to be found an unsystematized postulation of a purely mechanical relation between man and the spirits or deities. If certain conditions are fulfilled, the blessing will flow mechanically, quite independent of the volition of the spirits. If, for instance, the Winnebago make the necessary offerings of tobacco and eagle-feathers to the Thunder-Birds, and they accept them, they must grant man those powers which they possess. Theoretically the spirits have the alternative of accepting or refusing these offerings; but there is something so inherently tempting in the tobacco, eagle-feathers, etc., that very few spirits are credited with sufficient strength of character to refuse. As an instructive example of this attitude, I might cite the following incident in a Winnebago myth. The Winnebago are offering tobacco to the Buffalo spirits, and the smoke is ascending through a hole in the sky to the home of these spirits. The younger Buffaloes cannot resist the temptation of approaching the opening to catch a few whiffs of their favorite tobacco. They are thereupon warned by the older Buffaloes not to go too close, for the tobacco fumes might tempt them too strongly; and should they succumb and accept the offerings, then they would have to appear on earth and be killed.

This interpretation of the relation of the spirits to man is the popular one, that of the unreligious man. Alongside of it arose another closely allied historically. The popular interpretation was

only in a vague way a cause-and-effect relation. It remained for the shaman to emphasize this latter fact, to give a reason for the spirits' fondness for tobacco, to grant the spirits a certain amount of volition, and finally to insist upon certain qualifications on the part of the suppliants. A certain precision in the manner of making offerings was probably always present. The mechanical interpretation gave way to what might be called a "contract" theory. The spirits possessed the various powers without which man could achieve only a modicum of success; and man possessed tobacco, corn, eagle-feathers, buckskin, etc. Man would give the spirits tobacco, etc.; and the spirits would give man the powers they controlled. Accompanying this change of interpretation, there was a difference of attitude. The mechanical interpretation demanded but a modicum of religious feeling; the "contract" interpretation was heavily charged with it.

2. Guardian Spirits. — One of the fundamental features of North American religion is the marked projection of even the most minute socio-economic life-values into the idea of spirits and deities. It is probably for this reason that the relation of spirits to man is so intimate. There is no aloofness, such as we find in many modern religions. This intimate and direct relationship is of utmost importance; for to it and to the belief in *genii loci* was due the most characteristic feature of Indian religion, namely, the development of the idea of guardian spirits. If the *genii loci* played no rôle in the development of the conception of deities, it is perhaps largely due to the fact that they had already been requisitioned for the elaboration of this idea of guardian spirit. Very little was necessary to accomplish the transformation of the *genius loci* into the guardian spirit. The idea of guardian and protector of the precinct, as such, had but to be extended so as to include all those who lived in that precinct, both individually and collectively. I think it would be a mistake to assume offhand, that, strictly speaking, each individual had, or could have had, a distinctly different guardian spirit. The evidence accumulating now, although it will never be conclusive, points unmistakably to an association of guardian spirits with families or even larger groups. It is not to be supposed that there was an inheritance of such spirits, however, but rather a tendency to acquire those spirits who had proved their usefulness and power by the blessings they had given to

older members of the family. This tendency toward inheritance becomes especially marked in those areas where the guardian spirit is associated with certain definite powers, like success in hunting, etc.[1]

The only satisfactory method of describing the nature of the guardian spirits is to give a few fasting experiences *in extenso*. I will select such as bring out all the various aspects of this belief.

(A)[2] "Shanapow, when a young boy commenced fasting for his fortune. . . . He fasted eight days without eating, till he got very weak. On the eighth night he dreamed that one of the sacred monsters who lived in the falls appeared and told him, 'Look yonder and you will see something laced there as your reward for fasting,' indicating a rock in the centre of the falls. The whole earth looked transparent, and he went to the rock island, going over ice. When he got there he discovered a sacred kettle which was as bright as fire. It was a bear kettle from the underneath god to feed from when a sacrifice feast was given. 'Now,' said the god, 'go a short distance and you will find there what is granted you. You will then break your fast and eat.' So Shanapow went and found a large bear which he killed and made a sacrifice of, and then ate with others whom he invited."

(B)[3] "When I was ten years old, my grandmother wanted me to fast, so that I might know what blessing I was to receive. I was to start in the autumn of the year. At first I was to get just a little to eat and drink in the morning and evening. This meagre diet was to continue all through the autumn and winter. In the spring a little wigwam was built for me on a scaffold, not very far from the ground. In this wigwam I was to stay ten days and nights, and only get a little to eat in the mornings and evenings. My grandmother told me before entering not to believe every spirit that would come to me with promises, for there are some who try to deceive people, and only to accept the blessings of that spirit who came with a great noise and power.

"The first and second night I did not dream of anything, but during the third night a very rich man came to me and asked me to go along with

[1] The powers associated with the guardian spirits, and the method of acquisition of the guardian spirits, will be treated in other sections.

[2] Alanson Skinner, Social Life and Ceremonial Bundles of the Menomini Indians (Anthropological Papers, American Museum of Natural History, vol. xiii, part i).

[3] P. Radin, Some Aspects of Puberty Fasting among the Ojibwa (Museum Bulletin No. 2, Anthropological Series No. 2, Geological Survey of Canada).

him and that he would give me all the riches I wanted. I went along with him, but I did not accept what he offered me, and returned to my wigwam. Then I looked in the direction in which . . . he was disappearing, . . . and I saw that he had changed into an owl, and that the lodge that I had visited with him was a hollow tree with holes. The next night another rich man came to me, dressed in a suit of red material. He offered me the same things as the first man, and in addition told me that if I accepted his blessings I could change my clothes twice a year. After I refused he told me to look in his direction as he left me; and as I did so, I saw nothing but oak trees and dry and green leaves. The next night another man came and offered me boxes of sugar. I went with him, too, but I refused his blessing; and when I turned to look at him as he left, just as I had done in the other cases, I only saw a large maple-tree.

"My grandmother came twice a day to ask me about what I had dreamt and to give me something to eat. I told her about my dreams, and she again told me to accept the blessing of no one but the spirit who came to me with a great noise and strength. Some night before the tenth I heard the noise of a gush of wind above me and saw a very stout and strong man. With this man I went towards the north, and finally came to nine old men sitting around a circle. In the centre sat a very old man, and this was the man who blessed me. He told me that he had just been sent down from above. Then I was brought back to my little wigwam and told to look in the direction in which my guide was going. When he had gone some distance, I looked and I saw a number of large white stones in a circle and one in the centre of this circle. The next morning when my grandmother came to feed me and question me, I told her of what I had dreamt. That was the end of my fasting."

(C)[1] "One time in a dream the Sun came to me and said, 'Look at the old woman's face (moon)!' I looked and saw that she had turned her back, but I saw through her head. I could see the paint on her face. There was a black spot on her nose, and a ring over her forehead, cheeks, and chin. Then the Sun said, 'Look at my face! This is the way you are to paint your face. You must always wear a cap made of running fisher-skin with one feather. This cap is to be like the one I now wear. If you do this, you shall have power to turn away rain."

[1] C. Wissler, Ceremonial Bundles of the Blackfoot Indians (Anthropological Papers, American Museum of Natural History, vol. vii, p. 74).

The foregoing fasting-experiences show clearly what powers are supposed to be possessed by guardian spirits. Of any attitude of veneration felt for the spirits by the fasters, I cannot detect the slightest trace. A religious thrill there certainly has been at all times, depending in intensity on the age and temperament of the faster. On the whole, however, we are dealing with a stereotyped explanation of success in life. It might be said to read as follows: "I am a successful hunter; I am a prominent warrior, etc.; and I am told that I have become such because I have done what my elders told me, — have practised these professions diligently, and made offerings to the spirits." The formula is put in the mouth of the youth; but it means nothing until it is interpreted much later in terms of each man's experience in life. It is because this formula has been tested by the results obtained, and found correct, that it is accepted and perpetuated.

The guardian spirit is not supposed to be in permanent attendance upon man. It is only when he is needed, in the crises of life, that he is brought into relation with man; and it is quite characteristic of the markedly materialistic basis of the belief that the spirit is only called into aid for the particular needs of each case. If it is a warpath that is to be undertaken, then the individual will demand such and such honors and safety for himself and the precise number of men accompanying him. Frequently his fasting-experiences will be carefully tested by the elders; and if found wanting in any respect, he will be restrained from going. This is of course merely another way of saying that the man was either too young or inexperienced for such an undertaking, or that the enemy were perhaps too powerful, etc. The fact that the Indians expressed this in religious terms should not blind us to the fact that they realized quite well that they were dealing with a purely mundane affair, and that mundane facts were to be given the greatest consideration.

III. THE METHODS OF BRINGING SPIRITS INTO RELATION WITH MAN

1. FASTING. — There seem to be two marked methods of bringing spirits into relation with man, — the one magical, and the other religious. Here we are concerned only with the religious. In the discussion of the latter, two things are to be borne in mind, — first,

that it means essentially a method of superinducing a religious feeling; and, secondly, that religious feeling is bound up with the desire for preserving and perpetuating socio-economic life-values.

On the whole, religious feeling was superinduced in the customary way, by fasting, self-castigation, etc.; but the characteristic method was fasting. In America fasting was undergone for a definite reason; namely, to superinduce religious feeling, which psychologically meant a state of mind in which the world of sense-impressions was shut out, and in which auto-suggestion and hallucinations were predominant. The desirability for such a state of mind lay not so much in the emotional pleasure it gave the Indian as in the belief that such a state of mind was essential for placing him in a position to overcome certain crises in his life which it was reasonable to anticipate would develop. He believed that fasting would accomplish this, because he was told so by the shaman and his elders.

If primarily religious feeling was evoked by the contemplation of the goods of this world and the desirability of possessing them in full measure, secondarily it was called forth by the belief in spirits possessed of powers that would make the question of acquiring these goods easy. If to us it seems that in the formula of fasting the relation to spirits is the essential thing, this is due to the fact that we are misled by the state of mind of the faster and our own religious bringing-up.

2. "Mental Concentration." — Among the Winnebago and Ojibwa, and I have reason to believe among other tribes, the efficacy of a blessing, of a ceremony, etc., depended upon what the Indians called "concentrating your mind" upon the spirits, upon the details of the ritual, or upon the precise purpose to be accomplished. All other thoughts were to be strictly excluded. The insistent admonition of the Winnebago elders is that the youth, in his fasting, centre his mind completely on the spirits, and that his blessing will vary in direct proportion to the concentration he has been capable of. It was believed that the relation between man and the spirits was established by this "concentration," and that no manner of care in ritualistic detail could take its place. Very frequently failure on a warpath or lack of efficacy of a ritual was attributed to the fact that the Indian or Indians had been lacking in the intensity of their "concentration." There are indications that this "concentration" played an important

part in a number of purely magical rites among the Winnebago and Ojibwa. Thus among the former there was a special ceremony connected with the obtaining of animals, which consisted simply in "setting your mind" upon them. It is probable, therefore, that "concentration" was originally a purely magical device that was re-interpreted and included in the religious complex by the shaman.

3. Self-Castigation and Torture. — There seems to be little doubt that both self-castigation and torture were originally unconnected with the religious complex. The idea that a relation between man and spirits could be established with their aid, is always a special and shamanistic interpretation. Neither self-castigation nor torture are commonly found associated in North America with religion. They form prominent elements, however, in the religious complex associated with the Sun Dance of the Plains Indians, the Mandan Okeepa and ceremonies of the Mexican Indians.

4. Offerings and Sacrifices. — The theory on which the Indians made offerings has been touched on before. It is what Tylor calls the "gift-theory." Of his "homage" and "abnegation-theory," I cannot find any trace in North America.

Offerings were made to spirits, the dwelling-place of spirits, or objects in any way connected with spirits. What was sacrificed depended largely upon the pursuits of the people and custom. To different spirits different articles were frequently given, but all received tobacco. Among most tribes, food-animals — such as deer, elk, moose, buffalo, etc. — were offered. Among the Woodland and Woodland-Plains tribes, white dogs were sacrificed. Human sacrifices were found only among the Pawnee. As is well known, they were common in Mexico. The method of sacrifice varied. When the offerings were made to spirits, food was either put for them at certain places or partaken of by the Indians themselves upon the supposition that the spirits either partook only of the spirit of the food or were present invisibly as feasters. When the offerings were made to places supposed to be the abode of spirits, or to objects connected with them, they were placed near them. Offerings to the *genii loci* were made whenever an individual passed their precincts. To the more important spirits and deities, sacrifices were made at definite times or when ceremonies were performed. Any individual could make offer-

ings. On certain occasions — such, for instance, as before starting out on a war-expedition, at specific ceremonies, etc. — this function devolved upon special individuals.

5. Prayers and Incantations. — "Prayers may either be spoken words, or they may be expressed by symbolic objects placed so that they convey the wishes of the worshipper to the powers."[1] The latter type is found only among the Pueblo Indians. Prayers accompany practically all sacrifices and ceremonies. In the rituals of the North Pacific coast Indians they are, however, rare. The objects of prayer are always those socio-economic life-values to which importance is attached in any given area. What in these values is stressed depends, to a certain extent, upon the ambitions of the individual, and consequently it happens at times that individuals may pray for abstract blessings or for ideal objects. Prayers are always accompanied by a religious feeling when made by the shaman, but frequently become mere formulas in the hands of the lay Indian. In such cases their efficacy will generally be regarded as depending upon the correctness with which they are repeated. When the prayer takes a ritualistic form and it is regarded as efficacious in itself, it becomes an incantation, and properly belongs to the domain of magic. This seems to be characteristic of prayers in northern California and among the Eskimo, but is frequently found elsewhere.

6. Charms and Fetiches. — Charms and fetiches are employed in many parts of North America as a means of establishing a relationship between man and spirits. These charms and fetiches are either regarded as the gift of the spirits, the dwelling-place of the spirits, or are connected intimately with them in some way. They belong largely, however, to the domain of magic, and may be regarded as having been secondarily associated with the religious complex. The main element in this transformation from magic to religion was probably the definite interpretation of the relation of the charm to the results obtained. For the purely mechanical or perhaps coercive relation, the shaman substituted the religious relation.[2]

[1] F. Boas, article "Prayer," in Handbook of American Indians (Bureau of American Ethnology, Bulletin 30, Part 2).

[2] It might be well to mention here the idea that spirits may be propitiated if offended by transgressions of certain rules. The most important of these means of propitiation is confession, which is found among the Eskimo, Iroquois, and Athapascan. It has lately developed among the Winnebago, but it may be due there to the influence of Christianity.

IV. THE FOLKLORISTIC-RELIGIOUS COMPLEX[1]

1. THE CONCEPT OF EVIL. — It is generally supposed that the Indians' actions are regulated "by the desire to retain the good will of those [spirits] friendly to him, and to control those that are hostile." This suggests a clear concept of evil, and seems justified when we remember that almost every tribe postulates its good and bad spirits. An examination of North American data, however, shows that while the Indians do speak of the existence of bad spirits, with the exception of the Eskimo, these spirits seem to exercise little influence upon their lives. Evil would most assuredly befall individuals who, for instance, fasted at the wrong time, or who accepted blessings from spirits when they were expressly warned against them; but people seem to have been quite careful to heed these warnings. In the vast majority of cases, evil seems to result either from inability to obtain protection or from infringement of rules. Thus, if an individual succumbs during one of life's crises, it is not because of an evil spirit, but because he failed to provide himself with the means of protecting himself on such an occasion. There is another kind of evil, however, besides that which is connected with inability to obtain protection from the spirits; and that is the evil caused by definite individuals. Such individuals claim to have received the power of inflicting injury from the spirits. This does not mean, however, that bad spirits blessed them. The power to inflict evil is one of the powers that men may covet and that all spirits may grant.

Summing up, we may say that in practice the Indian does not deal with the evil spirits he unquestionably postulates, but that the same spirit may be connected with good as with evil. It may very well be that in this twofold aspect of the spirits we still see the reflection of an older concept of the spirits in which they, like the tricksters, were not concerned with the weal or woe of man, but their own interests; and that whatever evil or good man obtained through them was indirect.

2. THE CONCEPT OF DISEASE. — Disease is conceived of in a variety of ways. It may be due to a general lack of protection, to the presence of a material object in the body, to the absence of the soul from the body, or rarely to the action of a spirit who distributes it. I believe

[1] Under this heading we shall concern ourselves entirely with the folkloristic-religious concepts.

it is a fundamental belief in North America that disease is natural to man, and that without the spirits' protection he will most assuredly become ill on numerous occasions in life. The specific disease itself is caused by some individual who has caused a material object to enter another person's body or has abstracted his soul. I know of only one case in North America where disease is conceived of as being incarnated in a spirit or deity; and that is among the Winnebago, where the curious deity known as Disease-Giver is found.

Disease is associated with the religious complex, because those individuals who are conceived of as causing and curing it are supposed to have obtained their powers from spirits. This inclusion represents undoubtedly the activity of those shamans with whom the function of curing disease became definitely associated. For the majority of lay Indians, I feel confident, disease was regarded as being caused and cured by purely magical methods.

3. The Concept of Death, After-Life, and Re-incarnation. — Death was everywhere conceived of as a cessation of life on this earth, and a cessation of certain kinds of intercourse between the individual who had died and living individuals. It was not, however, considered by any means as a cessation of all kinds of intercourse. It could not be staved off entirely; but it could be staved off for a larger or smaller number of years, depending upon the nature of the blessings an individual received, his participation in certain ceremonies, the nature of his offerings to the spirits, etc. Death was regarded as having originated in a number of ways at the beginning of the world, the reasons given being generally folkloristic ones. At times it is not accounted for at all.

After death, an individual was supposed to travel to a spirit-land much the same as ours, and to remain there. This journey to the spirit-land is regarded as being beset with many dangers, to overcome which the aid of the living is necessary. Among certain tribes the belief is found that only individuals who have led an upright life are able to reach the spirit-land; but among most tribes this is apparently not the case, and the ability to reach the spirit-land depends upon a variety of causes. Among the Winnebago, for instance, if one of the warriors invited to a wake boasts of his war-exploits, the individual who has died will fall over one of the precipices on the spirit-road;

and among the Ojibwa, all infants are doomed to die on the road, because they are unable to balance themselves successfully on the slippery bridge that spans one of the rivers that have to be crossed. The life that is led in the spirit-land is one of unadulterated joy. Individuals are much the same as when they lived on earth, except that among many tribes a person is believed to appear there in the precise bodily form in which he died. If he had been scalped, if his head had been cut off, if he had been wounded in a certain way, etc., he would continue his existence in the spirit-land in that shape.

Among most tribes a belief in re-incarnation is present in varying degrees. It is especially prominent among the Sauk and Fox, Winnebago, and Omaha. Only shamans and prominent warriors were generally regarded as being able to become re-incarnated, as a rule, although among the Winnebago it was associated with death on the warpath and membership in the Medicine Dance. The following Winnebago account will bring out most of the salient features connected with this belief.

"I came from above, and I am holy. This is my second life on earth. Many years before my present existence I lived on this earth. At that time every one seemed to be on the warpath. I also was a warrior and a brave man. Once when I was on the warpath I was killed. It seemed to me, however, as if I had only stumbled. I rose and went right ahead until I reached my home. There I found my wife and children, but they would not look at me. Then I spoke to my wife, but she seemed to be quite unaware of my presence. What can be the matter? I thought. . . . Finally it occurred to me that I might in reality be dead, so I returned to the battle-field; and, surely enough, there I saw my body. . . . After that I tried for four years to return to my home, but I was unsuccessful.

"After a while I became transformed into a fish. Their life is much worse than ours, for they are frequently in lack of food. . . . At another time I became transformed into a bird, and at still another time into a buffalo. From my buffalo existence I was permitted to go to my spirit-home. The one in charge of that home is my grandfather, and I asked him for permission to return to this earth again. At first he refused, but after a while he consented. Before I left, he told me, 'Grandson, before you go, you had better have the spirits bless you, so that you will be able to live in peace on the earth.' There I fasted for four years. . . . Then I came to this earth

again. When I came here, I entered a lodge and was born there. I thought that I was entering a lodge, but I was in reality entering my mother's womb. Even in my prenatal existence I never lost consciousness."

4. The Concept of the Soul. — According to Professor Boas, there are three mental processes upon which the ideas relating to the soul are based, — "the formation of the concept of 'power of acting' resident in a body, but distinct from the existence of the body; the formation of concepts due to the subjective feelings connected with imagery; and that of others due to the objective impressions made by memory-images."[1] The soul is regarded as invisible to all except shamans. To them it appears in different forms. Among the Nootka it is supposed to be a tiny man. The same belief occurred among the Huron and Eskimo. Among the Central Algonkin and Winnebago it is like a shadow; among the Shasta it is recognized only by its trail and footprints; and among the Tsimshian and Bellacoola it is supposed to be a butterfly or bird.[2]

V. THE TRANSMISSION OF THE RELIGIOUS COMPLEX

The religious complex is transmitted by the shaman and the lay Indian. In the case of the shaman it may be said to be almost inherited. Every shaman has the natural desire to have one of his children inherit all his supernatural powers; and to do so he surrounds him with conditions that make it practically certain that the son will be blessed in the same way as he was. Practically the son inherits these powers, but only that son who duplicates the religious conditions his father submitted to when he was blessed; and consequently only that son who shows special aptitude and conscientious endeavor will obtain them. The religious intensity of the shaman, and the conservatism with which his religious complex is handed down, are due, therefore, to the conscious selection of specially-endowed individuals from generation to generation, often within a small number of families.[3]

Among a number of tribes the objective content of the religious

[1] F. Boas, article "Soul," in Handbook of American Indians (Bureau of American Ethnology, Bulletin 30, Part 2).

[2] Compare also further discussion of the soul in the article quoted above, from which these statements have been taken.

[3] P. Radin, "Introduction to the Study of Ojibwa Religion" (Papers and Records of the Ontario Historical Society, vol. xii).

complex is purchased. Among the Winnebago and Ojibwa, for instance, those individuals who were not able to obtain blessings directly from the spirits would buy certain "blessings" from their more fortunate brethren. Among the Blackfoot and Arapaho any blessing could be purchased; but it seems that great care was exercised that the purchaser be a suitable person. A strong religious feeling seems to have accompanied purchased blessings among the Blackfoot and Arapaho, but among the Winnebago it was very weak. In both cases, however, the efficacy of these purchased blessings was due to the fact that originally they were obtained from the spirits in the proper way.

What the lay Indian transmitted was the objective content of religion; and this had a tendency, in his hands, to develop into formulas. While these were handed down unchanged from generation to generation, the folkloristic background exerted its influence in interpretations and by new accretions.

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MYTHOLOGY AND FOLK-TALES OF THE NORTH AMERICAN INDIANS

By FRANZ BOAS

I. MATERIAL

DURING the last twenty years a very considerable body of tales of the North American Indians has been collected. Before their publication, almost the only important collections available for scientific research were the Eskimo tales published by H. Rink, — material recorded in part by natives during the earlier part of the nineteenth century, and printed also in the native language in Greenland; the traditions collected by E. Petitot among the Athapascan tribes of northwestern Canada; the Ponca tales collected by J. O. Dorsey; a few Siouan tales recorded by Stephen R. Riggs; and the Klamath traditions collected by Albert S. Gatschet. The material published in Daniel G. Brinton's "Library of Aboriginal American Literature" also deserves notice. In all of these the attempt was made to give a faithful rendering of the native tales; and in this they differ fundamentally from the literary efforts of Schoolcraft, Kohl, and other writers. Owing to their scope, they are also much more valuable than the older records found in the accounts of missionaries and in books of travel and exploration.

Since those times, somewhat systematic collections have been made among a large number of tribes; and, although the continent is not by any means covered by the existing material, much has been gained to give us a better knowledge of the subject.

Two types of collection may be distinguished. The one includes tales taken down in English or in other European tongues directly from natives, or indirectly with the help of interpreters. Among American institutions, the Bureau of American Ethnology, the American Museum of Natural History, the Field Museum of Natural History (Field Columbian Museum) in Chicago, for a few years the

Carnegie Institution of Washington, have worked in this field. Much material is also found in the "Journal of American Folk-Lore," and in the earlier volumes of the "American Anthropologist" and of the "American Antiquarian and Oriental Journal." The other type of collection contains tales taken down from dictation by natives, or recorded in the native language by natives, and later on revised and edited. So far, the latter form the smaller group. We have somewhat extended material from East Greenland, the Alaskan Eskimo, from several Athapascan tribes, from four tribes from the coast of British Columbia, three Chinook tribes, three Oregon tribes, five Californian tribes; some Pima, Apache, and Navaho material; Iroquois, Blackfoot, and Fox texts; and collections from the Ponca and Sioux. Publications of this type were due first of all to the Bureau of American Ethnology. For a time the American Museum of Natural History published a considerable body of texts; and similar work has been conducted by the University of California in Berkeley, the Museum of the University of Pennsylvania in Philadelphia, and more systematically by the American Ethnological Society and in the Anthropological Publications of Columbia University in New York. The Geological Survey of Canada is also beginning to make available material of this type. The material collected by Professor Uhlenbeck and Dr. de Jong among the Blackfeet should also be mentioned in this connection.

With the increase of material, the demands for accuracy of record have become more and more stringent. While in the earlier period of collecting no great stress was laid upon the recording of variants and their provenience, — as, for instance, in Rink's collection, in which we have variants from different parts of the country combined into a single story, — we now desire that each tale be obtained from several informants and from several places, in order to enable us to gain an impression of its importance in the tribal lore, and to insure the full record of its contents and of its relations to other tales. Furthermore, the importance of the record in the original language has become more and more apparent. This is not only for the reason that the English translation gives a very inadequate impression of the tales, but also because often the interpreter's inadequate knowledge of English compels him to omit or modify important parts. Even the best

translation cannot give us material for the study of literary form,—a subject that has received hardly any attention, and the importance of which, as I hope to show in the course of these remarks, cannot be overestimated.

It is doubtful whether all the records that have been collected in previous years are well adapted to this study, because the difficulty of taking down accurately rapid dictation from natives, and the difficulty which the natives encounter in telling in the traditional manner sufficiently slowly for the purpose of the recorder, almost always exert an appreciable influence upon the form of the tale. Owing to the multiplicity of American languages and to the exigencies of the situation in which students find themselves, the recorder has only rarely a practical command of the language; and for this reason the difficulty just mentioned cannot be readily overcome. Up to the present time, the most successful method has been to have the first record made by natives who have been taught to write their own language. After they have acquired sufficient ease in writing, the diction generally becomes satisfactory. A certain one-sidedness will remain, however, as long as all the material is written down by a single recorder. It has also been suggested that phonographic records be used, which may be written out from re-dictation; but so far, no extended series has been collected in this manner.

The experience of investigators in many regions suggests that the difficulty just mentioned is not as great as might be supposed. This is indicated by the fact that good informants often break down completely when requested to dictate descriptions of the events of everyday life. They will then state that they are well able to tell stories that have a fixed form, but that the slow dictation of descriptions to be made up new is too difficult for them. It would seem, therefore, that the form in which most of the tales are obtained must be fairly well fixed. Ordinarily a poor rendering of a story can easily be recognized by the fragmentary character of the contents, the briefness of sentences, by corrections and unnecessary repetitions. We also have many tales in which the same incident is repeated a number of times; and in those cases the form of the repetitions shows, on the whole, whether the narrator has a fairly good command of his subject.

Furthermore, a great many native tales contain, besides the connected narrative, stereotyped formulas, which are always told in the same manner, and which are undoubtedly always given in correct form.

It has been the habit of most collectors to endeavor to find the "right" informant for tales, particularly when the stories refer to elaborate sacred rituals, or when they are the property of social groups possessing definite privileges. It may then be observed that certain tales are in the keeping of individuals, and are only superficially or partially known to the rest of the people. In these cases the recorder has often adopted the attitude of the Indian who possesses the most elaborate variant of the tale, and the fragmentary data given by the uninitiated are rejected as misleading. This view is based on the assumption of a permanence of form of tradition that is hardly justifiable, and does not take into consideration the fact that the esoteric variant which is developed by a small number of individuals is based on the exoteric variants afloat among the whole tribe. We shall revert to this subject later on.

This static view of Indian folk-lore is also expressed by the preference given throughout to the collection of purely Indian material unaffected by European or African elements, and by the reluctance of investigators to bestow as much care upon the gathering of the more recent forms of folk-lore as is given to those forms that were current before the advent of the whites. For the study of the development of folk-tales the modern material is of particular value, because it may enable us to understand better the processes of assimilation and of adaptation, which undoubtedly have been of great importance in the history of folk-tradition.

II. MYTH AND FOLK-TALE

In our American collections the two terms "myth" and "folk-tale" have been used somewhat indefinitely. This is a necessary result of the lack of a sharp line of demarcation between these two classes of tales. No matter which of the current definitions of mythology we may adopt, there will arise difficulties that cannot be settled without establishing arbitrary distinctions. If we define myths as tales that explain natural phenomena, and that may be considered in this sense as parts of an interpretation of nature, we are confronted with the

difficulty that the same tale may be explanatory in one case, and a simple tale without explanatory features in another. The strict adherence to this principle of classification would therefore result in the separation of tales that are genetically connected, one being classed with myths, the other with folk-tales. It goes without saying that in this way unnecessary difficulties are created.

If we make the personification of animals, plants, and natural phenomena the standard of distinction, another kind of difficulty arises, which is based on the lack of a clear distinction between myths, on the one hand, and tales relating to magical exploits that are considered as true and of recent occurrence, on the other, and also on the similarities between tales relating to the adventures of human beings and animals.

Of similar character are the obstacles that stand in the way of a definition of myths as tales relating to ritualistic performances.

In all these cases the same tales will have to be considered, in one case as myths, and in another as folk-tales, because they occur both in explanatory and non-explanatory forms, relating to personified animals or natural objects and to human beings, with ritualistic significance and without it. If we do accept any one of these definitions, it will therefore always be necessary to consider the two groups together, and to investigate their historical and psychological development without regard to the artificial limits implied in the definition. This difficulty cannot be met by assuming that the folk-tale originated from a myth and must be considered a degenerate myth, or by the hypothesis that conversely the myth originated from a folk-tale; for, if we do this, a theoretical point of view, that should be the end of the inquiry, is injected into our consideration.

For our purposes it seems desirable to adhere to the definition of myth given by the Indian himself. In the mind of the American native there exists almost always a clear distinction between two classes of tales. One group relates incidents which happened at a time when the world had not yet assumed its present form, and when mankind was not yet in possession of all the customs and arts that belong to our period. The other group contains tales of our modern period. In other words, tales of the first group are considered as myths; those of the other, as history. The tales of the former group

are not by any means explanatory in character throughout. They treat mostly of the achievements of animals and of heroes. From our modern point of view, it might be doubtful sometimes whether such a tale should be considered as mythical, or historical, since, on account of the Indian's belief in the powers of animals, many of the historical tales consist of a series of incidents that might as well have happened in the mythological period; such as the appearance of animals that become supernatural helpers and perform marvellous exploits, or of those that initiate a person into a new ritual. It can be shown that historical tales may in the course of time become mythical tales by being transferred into the mythical period, and that historical tales may originate which parallel in the character and sequence of their incidents mythical tales. Nevertheless the psychological distinction between the two classes of tales is perfectly clear in the mind of the Indian. It is related, in a way, to the ancient concepts of the different ages as described by Hesiod.

For our analytical study we must bear in mind that the psychological distinction which the natives make between mythical and historical tales is, from an historical point of view, not more definitely and sharply drawn than the line of demarcation between myths and tales defined in other ways. The point of view, however, has the advantage that the myths correspond to concepts that are perfectly clear in the native mind. Although folk-tales and myths as defined in this manner must therefore still be studied as a unit, we have avoided the introduction of an arbitrary distinction through our modern critical point of view, and retained instead the one that is present in the minds of the myth-telling people.

The mythical tales belong to a period that is long past, and cannot be repeated in our world, although the expectation may exist of a renewal of mythical conditions in the dim future. Only when we ourselves are transferred into the realm of mythical beings, that continue to exist somewhere in unknown parts of our world, may myths again become happenings. The mythological beings may thus become actors in historical folk-tales or in localized tradition, although they appear at the same time as actors in true myths. The Indian who disappears and is taken to the village of the Buffaloes is, in the

mind of the Indian, the hero of an historical tale, although the Buffalo men are at the same time mythical personages. The novice initiated by the spirits of a secret society is taken away by them bodily; and when he re-appears among his tribesmen, he tells them his story, which deals with the gifts of mythical beings. The person who revives from a death-like trance has been in communion with the mythical world of the ghosts, although he has been allowed to return to our world and to follow his usual occupations.

It is therefore clear that in the mind of the Indian the appearance of mythical characters is not the criterion of what constitutes a myth. It is rather its distance in space or time that gives it its characteristic tone.

It appears from these remarks that in the study of the historical origin of myths and folk-tales of modern times, the widest latitude must be given to our researches. The types and distribution of the whole body of folk-tales and myths must form the subject of our inquiry. The reconstruction of their history will furnish the material which may help us to uncover the psychological processes involved.

I cannot agree with Bastian and Wundt,[1] who consider the question how tales actually originated as comparatively insignificant, because both independently created and disseminated material are subject to the same psychological processes, which may therefore be studied by an analytical treatment of the tales as they now exist. I do not see how this can be done without interpreting as an historical sequence a classification based entirely on psychological or other considerations, — a method that can never lead to satisfactory results, on account of the arbitrary, non-historical premises on which it is founded. If there is more than one classification of this type possible, the reconstructed psychological processes will differ accordingly; and we must still demand that the change from one type to another be demonstrated by actual historical evidence when available, by inferences based on distribution or similar data when no other method can be utilized. Here, as in all other ethnological problems, the principle must be recognized that phenomena apparently alike may develop in multitudinous ways. A geometrical design may be developed from a

[1] Wilhelm Wundt, Völkerpsychologie, vol. ii, part 3 (1909), p. 62.

conventionalized realistic form, or it may develop directly through a play with elementary technical motives; a semi-realistic form may be a copy of nature, and may have been read into a pre-existing geometrical design; or both may have been borrowed and developed on new lines. A ritual may be a dramatic presentation of a myth, it may be an ancient rite to which a myth has become attached, or it may be a copy of foreign patterns. There is no *a priori* reason that tells us which has been the starting-point of a local development, for the modern forms may have grown up in any of these ways or by their joint action. At the same time, the psychological processes that come into play in one case or the other are distinct. For this reason we insist on the necessity of an inductive study of the sequence of events as the basis for all our work.

The results of these inquiries, however, do not touch upon another problem upon which much thought has been bestowed. The beings that appear as actors in mythological tales are creatures of the imagination, and differ in the most curious ways from the beings which are known in our every-day world. Animals that are at the same time men, human beings that consist of parts of a body or are covered with warts and blotches, beings that may at will increase or decrease in size, bodies that may be cut up and will readily re-unite and come to life, beings that are swallowed by animals or monsters and pass through them unharmed, are the ordinary inventory of folk-tales as well as of myths. Whatever is nowhere seen and whatever has never happened are here the common every-day events.

The imagination of man knows no limits, and we must expect great variety of form in mythical beings and happenings. While such diversity is found, there still exist certain features that occur with surprising frequency, — in fact, so often that their presence cannot be due to accident. The attention of many investigators has been directed to these similarities, which have led to the inference that those traits that are common to the myths and folk-tales of diverse peoples and races are the fundamental elements of mythology, and that our real problem is the discovery of the origin of those most widely spread.

It would seem that much of the conflict of current opinion is due to our failure to keep distinctly apart the two lines of inquiry here char-

acterized, — the one, the investigation into the history of tales; the other, the investigation of the origin of traditions or ideas common to many or all mythologies.

III. DISSEMINATION OF FOLK-TALES

Our first problem deals with the development of modern folk-tales. During the last twenty years the tendency of American investigators has been to disregard the problem of the earliest history of American myths and tales, and to gain an insight into their recent growth. The first step in an inductive study of the development of folk-tales must be an investigation of the processes that may be observed at the present time, and these should form the basis of inquiries into earlier history. From this point of view much stress has been laid upon the accumulation of large numbers of variants of the same tale from different parts of the country, and these have been made the basis of a few theoretical studies.

Not more than twenty-five years ago Daniel G. Brinton asserted that the similarity of Iroquois and Algonkin mythologies was due to the sameness of the action of the human mind, not to transmission. Since that time such a vast amount of material has been accumulated, proving definite lines of transmission, that there is probably no investigator now who would be willing to defend Brinton's position. A detailed study of transmission among the tribes of the North Pacific coast, and a brief summary of the similarities between Navaho and Northwest American folk-tales, were followed by many annotated collections containing parallels from many parts of America. The importance of dissemination was brought out incidentally in Dr. Lowie's investigation on the test-theme in American mythology and by Dr. Waterman's study of the explanatory element in American folk-tales.

Two rules have been laid down that are necessary for cautious progress.[1]

First, the tale or formula the distribution of which is investigated, and is to be explained as due to historical contact, must be so complex, that an independent origin of the sequence of non-related elements

[1] See Boas, "Dissemination of Tales among the Natives of North America" (Journal of American Folk-Lore, vol. iv, pp. 13–20); W. Wundt, Völkerpsychologie, vol. ii, part 3, p. 62; Van Gennep, La formation des légendes (1912), p. 49.

seems to be improbable. An example of such a tale is the Magic Flight, in which we find a combination of the following elements: flight from an ogre; objects thrown over the shoulder forming obstacles, — first a stone, which becomes a mountain; then a comb, which becomes a thicket; lastly a bottle of oil, which becomes a body of water. It is hardly conceivable that such a group of unrelated incidents should arise independently in regions far apart.

The second rule is, that for a satisfactory proof of dissemination, continuous distribution is required. The simpler the tale, the greater must be our insistence on this condition. It must of course be admitted that simple tales may be disseminated over wide areas. It must also be admitted that in all probability tales known at one time have been forgotten, so that intermediate links in an area of geographically continuous distribution may have been lost. This, however, does not touch upon our methodological point of view. We desire to find uncontestable evidence of transmission, not alone the possibility or plausibility of transmission; and for this purpose our safeguards must be insisted on.

The study of the distribution of themes requires a ready means for their identification, and this necessitates a brief terminology: hence the attempts to establish a series of catch-words by means of which tales and incidents may readily be recognized. Frobenius, Ehrenreich, Lowie, and Kroeber[1] have contributed to this undertaking; but an elaboration of a satisfactory system of catch-words requires more penetrating study of the tales than those that have hitherto been made. Certain results, however, have been obtained from the study of the distribution of themes. The material that has been collected suggests that, as inquiry progresses, we may be able to discern various areas of distribution of themes. Some of these are known over large portions of the continent. For instance, the story of the Bungling Host - - of a person who is fed by the magic powers of his host, who tries to imitate him and fails ignominiously — occurs from New

[1] Leo Frobenius, Im Zeitalter des Sonnengotts; Paul Ehrenreich, Die Mythen und Legenden der Südamerikanischen Urvölker, pp. 34–59; Robert H. Lowie, "The Test-Theme in North American Mythology" (Journal of American Folk-Lore, vol. xxi, p. 101); T. T. Waterman, "The Explanatory Element in the Folk-Tales of the North American Indians" (*Ibid.*, vol. xxvii, pp. 1–54).

Mexico on, all over the eastern part of North America, and is lacking only, as it seems, in California and on the Arctic coast. Similar to this is the distribution of the story of the Rolling Rock, which pursues an offending person, and pins him down until he is finally freed by animals that break the rock. Perhaps this does not extend quite so far north and south as the former story. While the Bungling-Host tale is known on the coast of British Columbia, the Rolling-Rock story does not reach the Pacific coast, although related tales are found in parts of California. Still other tales are essentially confined to the Great Plains, but have followed the trade-routes that lead to the Pacific Ocean, and are found in isolated spots from British Columbia southward to California. To this group belongs the story of the Dancing Birds, which are told by a trickster to dance with closed eyes, and then are killed by him, a few only escaping. Another story of this group is the characteristic Deluge story, which tells of the creation of a new earth by diving animals. During the Flood the animals save themselves on a raft. One after another dives, until finally the musk-rat brings up some mud, of which the new earth is created. This story is known in a very wide area around the Great Lakes, and occurs in recognizable form on a few points along the Pacific coast. To this same group belongs the tale of the Star Husbands. Two girls sleep out of doors, see two stars, and each wishes one of these for her husband. When they awake the following morning, their wish is fulfilled. One of the stars is a beautiful man, the other is ugly. Eventually the girls return to earth. This tale is known from Nova Scotia, across the whole width of the continent, to the Western plateaus, Vancouver Island, and Alaska. Still other stories of the same area are those of the Blood-Clot Boy, who originates from some blood that has been thrown away, and who becomes a hero; the story of Thrown-Away, the name for a boy who is cast out, brought up in a magic way, and who becomes a hero; the Snaring of the Sun; and many others.

The second group has a decided Western distribution, and is found extensively on the Plateaus and on the Pacific coast; although some of the stories have also crossed the mountains, and are found on the Eastern Plains. To this group belongs the story of the Eye-Juggler; that is, of an animal that plays ball with his eyes, and finally loses them; of the ascent to the sky by means of a ladder of arrows; and

the story of the contest between Beaver and Porcupine, Beaver inviting Porcupine to swim, while Porcupine invites Beaver to climb.[1]

A third area of distribution may be recognized in the peculiar migration legends of the Southwest and of the Mississippi basin, which have no analogues in the northern part of the continent.

The distribution of themes becomes the more interesting, the more carefully the tales are considered. Thus the widely spread story of the Bungling Host may be divided into a number of types, according to the tricks performed by the host. On the North Pacific coast occurs the trick of knocking the ankle, out of which salmon-eggs flow; on the Plateaus, the piercing of some part of the body with a sharp instrument and pulling out food; on the Plains, the transformation of bark into wood; and almost everywhere, the diving for fish from a perch.[2] There is little doubt that as collection proceeds, and the distribution of themes can be studied in greater detail, the areas of dissemination will stand out more clearly than now. The greatest difficulty at present lies in the absence of satisfactory material from the Southeast and from the Pueblo region.

Ehrenreich[3] has attempted to extend these comparisons to South America and to the Old World; but many of his cases do not conform to the methodological conditions previously outlined, and are therefore not quite convincing, although I readily admit the probability of dissemination between the southern and northern half of the continent. I am even more doubtful in regard to the examples given by Dähnhardt[4] and Frobenius.[5] If Dähnhardt finds, for instance, that we have in North America a group of tales relating how Raven liberated the sun, which was enclosed in a seamless round receptacle, that the Chukchee tell of Raven holding the sun under his tongue, that the Magyar tell a similar incident of one of the heroes of their fairy-tales, it does not follow that these are the same tales. The Chukchee and Magyar tales are alike, and I should be inclined to search for inter-

[1] See T. T. Waterman (Journal of American Folk-Lore, vol. xxvii, pp. 1–54).

[2] Franz Boas, Tsimshian Mythology (31st Annual Report of the Bureau of American Ethnology).

[3] P. Ehrenreich, Die Mythen und Legenden der südamerikanischen Urvölker und ihre Beziehungen zu denen Nordamerikas und der Alten Welt, 1905.

[4] O. Dähnhardt, Natursagen, vols. i–iv. References are given in the index to these volumes.

[5] Leo Frobenius, Die Weltanschauung der Naturvölker.

mediate links. Among the Chukchee the story has been inserted in the Raven cycle, and it seems probable that the prominence of the raven in their folk-lore is due to Northwest-coast influences, or that it developed at the same time in northeastern Asia and northwestern America. However, I do not think that the two tales are sufficiently alike to allow us to claim that they have the same origin.

Still more is this true of the alleged relations between Melanesian and American tales. Frobenius, who makes much of these similarities, calls attention, for instance, to the motive of the arrow-ladder, which occurs in Melanesia and in Northwest America. It seems to me that the idea of a chain of arrows reaching from the earth to the sky is not so complicated as to allow us to assume necessarily a single origin. Furthermore, the distance between the two countries in which the element occurs is so great, and there is apparently such a complete absence of intermediate links, that I am not convinced of the sameness of the elements. Even the apparently complicated story of the Invisible Fish-Hook, which was recorded by Codrington, and which is common to Melanesia and Northwest America, does not convince me. The fisherman's hook is taken away by a shark; the fisherman loses his way, reaches the shark's village, where a person lies sick and cannot be cured by the shamans. The fisherman sees his hook in the sick person's mouth, takes it out, and thus cures him. In this formula we have the widely-spread idea that the weapons of spirits are invisible to mortals, and *vice versâ;* and the story seems to develop without difficulty wherever this idea prevails. The markedly close psychological connection of the incidents of the tale sets it off clearly from the Magic Flight referred to before, in which the single elements are quite without inner connection. Therefore the sameness of the formula, connected with the lack of intermediate links, makes the evidence for historical connection inconclusive.

I repeat, the question at issue is not whether these tales may be related, but whether their historical connection has been proved.

Transmission between the Old World and the New has been proved by the occurrence of a set of complex stories in both. The most notable among these are the Magic Flight (or obstacle myth), the story of the Island of Women (or of the toothed vagina), and that of the killing of the ogre whose head is infested with frogs instead of lice.

The area of well-established Old-World influence upon the New World is confined to that part of North America limited in the southeast by a line running approximately from California to Labrador. Southeast of this line, only weak indications of this influence are noticeable. Owing to the restriction of the tales to a small part of America, and to their wide distribution in the Old World, we must infer that the direction of dissemination was from the west to the east, and not conversely. Every step forward from this well-established basis should be taken with the greatest caution.

A certain number of folk-tales are common to a more restricted area around the coasts of Bering Sea and the adjoining parts of Asia and America. Many of these may have had their origin in America. An extension of this inquiry is needed for clearing up the whole interrelation between the New World and the Old. The suggestion of analogies made by Ehrenreich, Dähnhardt, Frobenius, and others, is worthy of being followed up; but the proofs they have so far given are not convincing to me. Thus the theft of the sun and the bringing-up of the earth, to both of which I referred before; the story of the Swan Maidens who put off their clothing on the shore of a lake, assume human form, and are compelled to marry the hero who takes away their clothing, — are common property of America, Asia, and Europe. But the variations of these tales are considerable; and their complexity is not so great, nor their geographical distribution so continuous, as to claim that proof of their identity has been established.

We should also mention the possibility of contact between America and the Old World across the islands of the Pacific Ocean. Roland B. Dixon [1] has recently collected data that suggest possible contact along this line; and Von Hornbostel [2] has tried to show similarity on the basis of musical systems that in his opinion can be explained with difficulty only, unless there has been old historical contact. No convincing material, however, is found in the domain of folk-tales.

I have not considered in the preceding remarks the recent influx of foreign themes from Europe and Africa. A fairly large amount of European folk-lore material has been introduced into the United

[1] Roland B. Dixon, "The Independence of the Culture of the American Indian" (Science, 1912, pp. 46–55).

[2] O. von Hornbostel, "Über ein akustisches Kriterium für Kulturzusammenhänge" (Zeitschrift für Ethnologie, 1911, pp. 601–615).

States and Canada. Among those Indian tribes, however, that still retain fresh in their memory the aboriginal mode of life, these tales are sharply set off from the older folk-tales. They are recognizable by distinctiveness of character, although their foreign origin is not always known to the natives. They belong largely to the fairy-tales of Europe, and most of them were probably carried to America by the French voyageurs. It is only in recent times that a more extensive amount of material of this kind has been accumulated.[1] Favorite stories of this group are "John the Bear," "Seven-Heads," and a few others of similar type.

In Nova Scotia and Quebec, where contact between the European settlers and the Indians has continued for a long period, the number of European elements in aboriginal folk-lore is much larger. They may have been derived in part from Scotch and Irish sources. Still the distinction between the types of aboriginal and foreign tales is fairly clear, even to the minds of the narrators.

In the Southern States, where a large Negro population has come into contact with the Indians, we find introduced into the aboriginal folk-lore, in addition to the fairy tales, animal tales foreign to America. Since many of these are quite similar in type to aboriginal American folk-tales, the line of demarcation between the two groups has tended to become lost. Some of the foreign details have been incorporated in the folk-lore of the Southeastern Indians, and their distinct origin has been forgotten by them. A similar assimilation of the animal tale has been observed in isolated cases in other districts, as that of a La Fontaine fable among the Shuswap of British Columbia, and perhaps of a European folk-tale among the Zuñi. For this reason we may conclude that the complete amalgamation is due to their identity of type.

The conditions are quite different in Latin America, where, with the exception of the most isolated areas, native folk-tales have almost given way to European material. The bulk of the tales collected in Mexico and South America is of the same character as the folk-tales of the American Negroes, and belongs to the same cycle to which they belong. Since Negro influence cannot readily be shown over this whole district, and since much of the correlated material is clearly European,

[1] Most of this material has been published in the Journal of American Folk-Lore, vols. xxv–xxvii (1912–14); see also Rand, Legends of the Micmacs.

the origin of these tales is plausibly referred to Spanish and Portuguese sources. They were probably carried to America at the time of the Conquest, taken to Africa by the Portuguese, and later on imported into the United States by Negroes who had previously adopted them in Africa. The definite solution of this problem would require careful collections in Spain. The published Portuguese material is not unfavorable to this theory, which is also supported by the occurrence of the same tales in the Philippine Islands, that have been so long under Spanish influence. It is true that some tales of this group that are found in southern Asia may be due to East-Indian influences, but the form of those hitherto published is rather in favor of the theory of a late Spanish origin. It seems likely that along with these tales the Negroes brought some African stories of similar character into North America.

Among the elements that have been introduced into our continent in this way, I mention the Magic Flight, which has thus been carried in two currents into the New World, — an ancient one, coming from Siberia by way of Bering Strait; a recent one, arising in Spain, and passing into Latin America, and gradually extending northward until the two meet in northern California.

It is not easy to say when this superposition of the ancient American lore by new European material in Latin America was accomplished. There are, however, indications favoring the assumption that some of it has had time to influence American tribes that did not come directly into intimate contact with Spanish cultural elements. Thus the tale of the race between Turtle and Rabbit — in which Turtle places his brothers, who look just like him, all along various points of the race-track, and thus makes Rabbit believe that he has won — has entered northward into Oregon and British Columbia; and a number of incidents that occur in Vancouver Island and in the interior of British Columbia may have to be explained in the same way. The general question of the influence of European lore upon our aboriginal tradition deserves much more careful attention than it has hitherto received.

IV. CHARACTERISTICS OF MYTHOLOGICAL AREAS

We return to the discussion of the aboriginal lore as it is found in our times, disregarding those elements that can be proved to be of

modern introduction. The material collected in different parts of the continent presents marked differences in type. These are due to several causes. In some cases the themes contained in the tales are distinct; in others the actors are different; the point of the stories shows certain local peculiarities; or the formal structure possesses local characteristics. Among these features, attention has been directed particularly to the first three, although no systematic attempts have been made to cover the whole field.

In the preceding chapter I have discussed the dissemination of tales, and at the same time pointed out that they are not evenly distributed over the whole continent. It does not seem possible to give a definite characterization of those themes that form the constituent elements of the folk-tales of these larger areas.

The actors that appear as the heroes of our tales differ greatly in various parts of the continent. While in Alaska and northern British Columbia the Raven is the hero of a large cycle of tales, we find that farther to the south, first the Mink, then the Bluejay, takes his place. On the Western Plateaus Coyote is the hero, and in many parts of the Plains the Rabbit is an important figure. In other regions, heroes of human form appear. These occur sporadically along the Pacific coast, but in much more pronounced form on the Great Plains and in the Mackenzie area, without, however, superseding entirely the animal heroes. Owing to this difference in the form of the actors, we find the same tales told of Rabbit, Coyote, Raven, Mink, and Bluejay, but also of such beings as culture-heroes or human tricksters among the Algonkin, Sioux, Ponca, and Blackfeet. There is almost no limit to these transfers from one actor to another. The story of the Bungling Host is, for instance, told of all these beings, and other themes are transferred from one to another with equal ease. Analogous transfers occur frequently in the case of other figures that are less prominent in the folk-tales. The sun is snared by Mouse, Rabbit, or beings in human form. Gull and a person appear as owners of the sun. Kingfisher, Water-Ouzel, or other birds, play the rôle of hosts. Chicken-Hawk, Gopher, Deer, or Eagle steal the fire. Fox, Opossum, or Rabbit dupe the Coyote. In part, the animals that appear in tales are determined by the particular fauna of each habitat; but, even aside from this, numerous transfers occur. In how far these changes may be

characteristic, aside from the changes of the main figure, has not yet been determined.

The third point in regard to which the materials of various areas show characteristic differences is their formal composition; for the impression that certain types of stories are characteristic of definite areas is not due mainly to the selection of themes that they contain, and of the actors, but to the fundamental ideas underlying the plots, and to their general composition, — if I may use the term, to their literary style.

Here a remark should be made in regard to the manner in which the accumulated material has been utilized for the purpose of theoretical discussion. When it is merely a question of discussing themes and actors, it may perhaps be justifiable to be satisfied with data collected without particular precautions. On the whole, I do not think that the study of the distribution of tales has been seriously vitiated by the use of unsatisfactory records, although even here a certain amount of caution must be demanded. When Dähnhardt makes use of a collection like Phillips's "Totem Tales," he vitiates his statements, because neither is the provenience of the tales given correctly — Alaskan tales, for instance, being told as collected in Puget Sound — nor are the contents sufficiently reliable to serve as a basis for conclusions. The tales are throughout changed and modified so as to satisfy the literary taste of the author. Too little attention has been paid by students to the necessity of a critical examination of their material. Such criticism becomes imperative when the formal composition is to be made the subject of serious study. It is necessary to know exactly what is native, and what may be due to the literary taste of the recorder; and what may be due to the individual informant, and what may be tribal characteristic. It is here that the importance of unadulterated text-material becomes particularly apparent. The neglect of all critical precautions, which is so characteristic of the manner in which ethnological material is habitually used, has vitiated the results of students, not only in the field of mythology and folk-lore, but perhaps even more in the study of customs and beliefs; and the time has come when the indiscriminate use of unsifted material must end.

In a way we may speak of certain negative features that are common to the tales of the whole American continent. The moralizing

fable, which is so widely spread in Europe, Asia, and Africa, seems to be entirely absent in America. Professor Van Gennep has claimed that all primitive folk-tales must be moral.[1] This is true in so far as the plots of all primitive folk-tales find a happy solution, and must therefore conform to those standards that are accepted by the narrators.[2] This, however, is not the same as the moralizing point of the story, that is the peculiar character of the fable of the Old World. Although the American tale may be and has been applied by Indians for inculcating moral truths, this tendency is nowhere part and parcel of the tale. Examples of the moral application of a tale have been given by Swanton [3] from Alaska, and by Miss Fletcher [4] from the Pawnee. In none of these, however, has the tale itself the moral for its point. It is rather a more or less far-fetched application of the tale made by the narrator. The tale can therefore not be classed with the African, Asiatic, and European animal tales, the whole point of which is the moral that is expressed at the end. It seems to me very likely that the almost complete absence of proverbs among the American natives is connected with the absence of the moralizing literary form, which among the Indians seems to be confined to the art of the orator who sometimes conveys morals in the form of metaphoric expression.

The attempt has been made to characterize one or two areas according to peculiarities of literary form. It is perhaps easiest thus to describe the folk-tales of the Eskimo, which differ from other American tales in that the fanciful animal tale with its transformation elements does not predominate.[5]

In other cases, however, the formal elements can be given clear expression only when the tales are grouped in a number of classes. Most

[1] La formation des légendes (1912), p. 16.

[2] Friedrich Panzer, Märchen, Sage und Dichtung (Munich, 1905), p. 14.

[3] John R. Swanton, Tlingit Myths and Texts (Bulletin 39, Bureau of American Ethnology).

[4] Alice C. Fletcher, The Hako (22d Annual Report of the Bureau of American Ethnology, part 2).

[5] Dr. Paul Radin states that the tales from Smith Sound published by Knud Rasmussen show that in Eskimo folk-lore the animal tale is as marked as among the Indians. This view does not seem to me warranted by the facts. The type of trifling animal tales recorded in Smith Sound has long been known, and differs fundamentally from animal tales common to the rest of the continent (article "Eskimo," in Hastings' Cyclopedia of Religions).

important among these are the serious origin tales, the trickster tales, and tales the incidents of which develop entirely or essentially in human society. As soon as this division is made, it is found possible to distinguish a certain number of well-defined types.

We shall take up first of all the origin myths. It is a common trait of most American origin myths that they deal with the transition from a mythological period to the modern age, brought about by a number of disconnected incidents, sometimes centering pre-eminently around the acts of one particular figure, sometimes by incidents distributed over a mass of tales that have not even the actions of one being as their connecting link. On the whole, the mythical world, earth, water, fire, sun and moon, summer and winter, animals and plants, are assumed as existing, although they may not possess their present forms, and although they may have been kept in some part of the world inaccessible to the human race. We are dealing, therefore, essentially with tales of expeditions in which, through cunning or force, the phenomena of nature are obtained for the use of all living beings; and with tales of transformation in which animals, land and water, obtain their present forms. We do not find in North America the genealogical sequence of worlds, one generated by another, that is so characteristic of Polynesia. The idea of creation, in the sense of a projection into objective existence of a world that pre-existed in the mind of a creator, is also almost entirely foreign to the American race. The thought that our world had a previous existence only as an idea in the mind of a superior being, and became objective reality by a will, is not the form in which the Indian conceives his mythology. There was no unorganized chaos preceding the origin of the world. Everything has always been in existence in objective form somewhere. This is even true of ceremonials and inventions, which were obtained by instruction given by beings of another world. There is, however, one notable exception to this general rule, for many Californian tribes possess origin tales which are expressions of the will of a powerful being who by his thoughts established the present order. When this type of tale became first known to us through the collections of Jeremiah Curtin, it appeared so strange, that the thought suggested itself that we might have here the expression of an individual mind rather than of tribal concepts, resulting either from the recorder's attitude

or from that of an informant affected by foreign thought. Further collections, however, have corroborated the impression; and it now seems certain that in northern California there exists a group of true creation tales.

The statement here made needs some further restriction, inasmuch as we have quite a number of tales explaining the origin of animals and of mankind as the results of activities of superior beings. Thus we have stories which tell how men or food-animals were fashioned by the Creator out of wood, stone, clay, or grass; that they were given life, and thus became the beings that we see now. It is important to note that in these cases it is not a mere action of a creative will, but always the transformation of a material object, which forms the essential feature of the tale. Furthermore, I believe it can be shown that many of these tales do not refer to a general creation of the whole species, but that they rather supply a local or temporary want. For instance, the Creator carves salmon out of wood, but they are not fit to serve his purpose. This does not imply that no salmon were in existence before that time, for we hear later on in the same cycle that the real salmon were obtained by a party that captured the fish in the mythical salmon country. The Creator, therefore, had to make artificially an object resembling the real salmon that existed somewhere else, but his unsuccessful attempt resulted in the origin of a new species. In another way this point may be brought out in the story of the origin of death, which appears as part of the Raven cycle of the North Pacific coast. Here Raven tries to create man first from stone, then from leaves. Since his attempts to give life to stones were unsuccessful, and man originated from leaves, man dies like leaves. The men thus created were, however, not the only ones in existence. Raven tried to create them only in order to obtain helpers in a particular kind of work in which he was engaged. Nevertheless the generalized explanation of death is attached to this story.

There are also marked differences not only in the manner in which origins are accounted for, but also in the extent to which these elements enter into tales. While in a large collection of Eskimo stories only from thirty-five to fifty phenomena are explained, the number is infinitely greater on the Western Plateaus. In the essay quoted before, Waterman states that ninety-eight Eskimo tales contain thirty-four

explanations, while in a hundred and eighty-seven Plateau tales, two hundred and twenty-five explanations are found. This quite agrees with the impression that we receive by the perusal of tales. In some cases almost every tale is an origin tale, in others these are few and far between. For the determination of this element as characteristic of various areas, we require, of course, extensive collections, such as are available from a few tribes only. It is particularly necessary that the tales should not be gathered from a one-sided standpoint, — as, for instance, for a study of celestial myths or of animal tales, — because this might give an entirely erroneous impression. That typical differences exist can be determined even now. It is particularly striking that in some regions, as on the Western Plateaus, the explanatory element appears often as the basis of the plot; while other tribes, like the Eskimo, have a number of very trifling origin stories almost resembling animal fables. If these are excluded from the whole mass of explanatory tales, the contrast between various groups in regard to the importance of the explanatory element becomes particularly striking.

Marked differences occur also in the selection of the phenomena that are explained. Among the southern Caddoan tribes the explanation of stars preponderates. Among the Plateau tribes the largest number of tales refer to characteristics of animals. Among the Blackfeet and Kwakiutl the mass of tales relate to ceremonials. Among the Southern tribes a great number are cosmogonic tales.

Related to this is also the more or less systematic grouping of the tales in larger cycles. It is but natural that in all those cases in which traits of animals form the subject of explanatory tales, the tales must be anecdotal in character and disconnected, even if one person should form the centre of the cycle. It is only when the origin tales are brought together in such a way that the mythological concepts develop into a systematic whole, that the origin stories assume the form of a more complex cosmogony. This point may be illustrated by the long record of the origin legend of Alaska collected by Swanton,[1] in which obviously a thoughtful informant has tried to assemble the whole mass of explanatory tales in the form of a connected myth. Critical study shows not only the entire lack of cohesion of the parts, but also

[1] John R. Swanton, Tlingit Myths and Texts (Bulletin 39, Bureau of American Ethnology, pp. 80 *et seq.*).

the arbitrary character of the arrangement, which is contradicted by all other versions from the same region. Unifying elements are completely missing, since there is no elaboration of a cosmogonic concept that forms the background of the tale.

The same is no less true of the Kwakiutl, among whom the disconnected character of the origin tales is perhaps even more pronounced, since they refer in different ways to various aspects of the world; the origin of animals being treated in one way, the rise of social differences of the people in another way, and the supernatural basis of their religious ceremonials in still another manner. The contrast in form brought about by the systematization of mythical concepts may be seen clearly in the case of the Bellacoola, who have developed more definite notions of the organization of the world, and among whom, for this reason, the single stories, while still disconnected, are referred clearly to a background of systematized mythical concepts. The contrast between the disconnected origin tales and the elaborate cycles is most striking when we compare the disjointed tales of the Northwest with the long connected origin myths of the East as we find them among the Iroquois and Algonkin, and even more when we place them side by side with the complex myths from the Southwest.

On the whole, these features are characteristic of definite geographical areas. On the Western Plateaus it is almost entirely the grouping of the tales around one single hero that makes them into a loosely connected cycle. So far as we can discover, the single adventures are disconnected, and only exceptionally a definite sequence of incidents occurs. The same is largely true of the origin tales of the East and of the Upper Mississippi region, excepting their complicated introductory parts. In other districts — as on the Pacific coast between Vancouver Island and central California — a somewhat more definite order is introduced by the localization of the tales. A transformer travels over the country and performs a series of actions, which are told in a definite order as his journeyings take him from place to place. Thus we have a definite order, but no inner connection between the incidents. Quite distinct in type are the origin tales in which the people themselves are brought to their present home by long-continued migration. It is characteristic of the northern part of the continent

that there is no migration legend to speak of, that the people consider themselves as autochthonous. In the Southwest and in Mexico, on the other hand, particular stress is laid upon the emergence of the tribe from a lower world and upon its migrations, with which are connected many of the origin stories. This type, which in its whole setting is quite distinct from that of the North, occurs wherever Southern influences can be traced, as among the Arikara, a Caddoan tribe that migrated from the south northward to the Missouri River.

We may also recognize local characteristics in the details of the methods by which the present order of things is established. In the Plateau area, among the Eskimo, and in part at least in eastern North America, something happens that accidentally determines the future. When Grizzly-Bear, in a tussle, scratches Chipmunk's back, this gives rise to his stripes. If an animal jumps out of a canoe and breaks off his tail on the gunwale, this is the reason why it has a short tail. Since an animal wears down the hair of its bushy tail, it has a hairless tail now. Because the frog leaped on the moon's face, it stays there. In this area incidents in which transformations are the result of an intentional activity are quite rare, although the idea is not quite absent. In the East the concept of intentional transformation appears particularly in the tales treating of the origin of the earth and of ceremonies; on the Plateau it appears from time to time either in the form of councils held by the animals in order to decide how the world is to be arranged, or in contests between two antagonistic animals which desire different conditions. Thus we find in the Plateaus the story of Chipmunk and Bear, to which I referred before, essentially a contest which is to determine whether it shall always be day or always night; and in the Coyote cycle a contest which is to decide whether man shall be immortal.

On this basis a number of types of origins may be distinguished, — first, origins due to accidental, unintentional occurrences; second, the formation of the present order according to the decisions of a council of animals; third, development due to the actions of two antagonistic beings, the one benevolent and wishing to make everything easy for man, the other one counteracting these intentions and creating the difficulties and hardships of life; as a fourth type we may distinguish the culture-hero tales, the narrative of the migration of men or deities

who wander about and set things right. At the present time it is hardly possible to group the origin stories quite definitely from these points of view. In the extreme north the disorganized tale seems to prevail. On the plateaus of the northern United States and in part of the plains, the animal council plays an important rôle. California seems to be the principal home of the antagonistic formula, although this idea is also prominent among some Eastern tribes; and culture-hero tales appear locally on the North Pacific coast, but more prominently in the south.

We shall next turn to a consideration of the trickster tales. In a sense these have been referred to in the previous group, because many of the trickster tales are at the same time origin tales. If, for instance, Coyote tricks the birds by letting them dance near the fire, and their red eyes are accounted for in this way, we have here an origin story and a trickster tale. At present we are not concerned in this feature, but rather in the consideration of the question whether certain features can be found that are characteristic of the whole cycle as developed in various regions. First of all, it seems of interest to note the degree to which the whole group of tales is developed. It is absent among the Eskimo, moderately developed in California, probably not very prominent in the aboriginal myths of the Southwest, but most prolific on the Northwest coast, the Northern Plateaus, and in the East. Whether it is a marked feature of the Athapascan area cannot be decided at present. Some of the heroes of the trickster cycle have been noted before. Raven, Mink, Bluejay, on the Northwest coast; Coyote on the Plateaus; Old Man among the Blackfeet; Ishtiniki among the Ponca; Inktumni among the Assiniboin; Manabosho, Wishahka, and Glooscap among various Algonkin tribes, — are some of the prominent figures. Although a complete list of all the trickster incidents has not been made, it is fairly clear that a certain number are found practically wherever a trickster cycle occurs. I have already stated that one group of these tales is confined to the Western Plateaus, another one to the northern half of the continent. At present it is more important to note, that, besides these widely distributed elements, there seem to be in each area a number of local tales that have no such wide distribution. The characteristics of the tales appear most clearly when the whole mass of trickster tales in each region is studied. A

comparison of the Raven, Mink, and Bluejay cycles is instructive. The background of the Raven stories is everywhere the greedy hunger of Raven. Almost all of the Raven tales treat of Raven's endeavors to get plenty of food without effort; and the adventures relate to his attempts to cheat people out of their provisions and to the punishment doled out to him by those who have suffered from his tricks. Quite different in type are the Mink stories. Here we find throughout an erotic background. Mink tries to get possession of girls and of the wives of his friends, and his tricks have almost exclusively this one object. Occasionally only a trick based on his fondness for sea-eggs is introduced. The Bluejay adventures may be characterized in still another way. Generally it is his ambition to outdo his betters in games, on the hunt or in war, that brings him into trouble or induces him to win by trickery. He has neither a pronounced erotic nor a notably greedy character. The tricks of the Plateau cycles are not so easy to characterize, because the deeds of Coyote partake of all the characteristics just mentioned. Coyote attempts to get food, and his erotic adventures are fairly numerous; but on the whole these two groups are considerably outnumbered by tricks in which he tries to outdo his rivals.

The identification of trickster and transformer is a feature which deserves special notice. I have called attention to the fact — borne out by most of the mythologies in which trickster and culture-hero appear as one person — that the benefactions bestowed by the culture-hero are not given in an altruistic spirit, but that they are means by which he supplies his own needs.[1] Even in his heroic achievements he remains a trickster bent upon the satisfaction of his own desires. This feature may be observed distinctly in the Raven cycle of the Northwest coast. He liberates the sun, not because he pities mankind, but because he desires it; and the first use he tries to make of it is to compel fishermen to give him part of their catch. He gets the fresh water because he is thirsty, and unwillingly spills it all over the world while he is making his escape. He liberates the fish because he is hungry, and gets the tides in order to be able to gather shell-fish. Similar observations may be made in other mythological personages that embody the qualities of trickster and culture-hero. Wherever the desire to

[1] Introduction to James Teit, Traditions of the Thompson River Indians of British Columbia (Memoirs of the American Folk-Lore Society, vol. vi).

benefit mankind is a more marked trait of the cycle, there are generally two distinct persons, — one the trickster, the other the culture-hero. Thus the culture-hero of the Pacific coast gives man his arts, and is called "the one who sets things right." He is not a trickster, but all his actions have a distinct bearing upon the establishment of the modern order. Perhaps the most characteristic feature of these culture-hero tales is their lack of detail. Many are bare statements of the fact that something was different from the way it is now. The hero performs some very simple act, and ordains that these conditions shall be changed. It is only when the culture-hero concept rises to greater heights, as it does in the South, that these tales acquire greater complexity.

Here may be mentioned also the animal tales that belong neither to the trickster cycle nor to the origin tales. It is hardly possible to give a general characterization of these, and to distinguish local types, except in so far as the importance of the tale is concerned. In the Arctic and the adjoining parts of the continent, we find a considerable number of trifling animal stories that have hardly any plot. They are in part merely incidents descriptive of some characteristic of the animal. Some of these trifling stories are given the form of origin tales by making the incidents the cause from which arise certain bodily characteristics of the animals, but this is not often the case. In the more complex tales which occur all over the continent, the animals act according to their characteristic modes of life. Kingfisher dives, Fox is a swift runner, Beaver a good swimmer who lives in ponds, etc. Their character corresponds to their apparent behavior. Grizzly-Bear is overbearing and ill-tempered, Bluejay and Coyote are tricky. A sharp individual characterization, however, is not common.

We shall now turn to the third group of tales, those dealing with human society. These can only in part be characterized in the manner adopted heretofore. Some of their local color is due to the peculiar distribution of incidents which has been discussed before. On the whole, however, it is rather the plot as a whole that is characteristic. This may be exemplified by the incident of the faithless wife, which occurs all over the continent. The special form of the plot of the woman who has an animal or supernatural being or some object for a lover, whose actions are discovered by her husband, who disguises

himself in her garments and who deceives and kills the paramour and later on his wife, is most characteristic of the Northern area, reaching from northeastern Siberia and the Eskimo district southward to the Mississippi basin.

Individualization of form may also be illustrated by the widely distributed incident of the deserted child who rescues his people when they are in distress. The special form of the plot — in which the child makes his parents and uncles ashamed, is deserted and then helped by animals that send him larger and larger game until many houses are filled with provisions, and in which the people offer him their daughters as wives — is characteristic only of the North Pacific coast. On the Plains the deserted boy escapes by the help of his protector, and becomes a powerful hunter. The analysis of the plots has not been carried through in such detail as to allow us to do more than point out the existence of characteristic types in definite areas.

Much more striking in this group of tales is their cultural setting, that reflects the principal occupation and interests of the people. I have attempted to give a reconstruction of the life of the Tsimshian, basing my data solely on the recorded mythology. As might perhaps be expected, all the essential features of their life — the village, its houses, the sea and land hunt, social relations — appear distinctly mirrored in this picture. It is, however, an incomplete picture. It would seem that certain aspects of life do not appeal to the imagination of the story-tellers, and are therefore not specifically expressed, not even implied in the setting of the story. It is very striking how little the animal tale — in the instance in question, the Raven cycle — contributes to this picture. It is also of interest to note that among the Tsimshian the secret societies — which, as we conclude from other evidence, have been introduced only lately — occupy a very unimportant part in the tales, while the potlatch and the use of crests are two of their most notable features. How accurately the cultural background of the life of the people is reflected by the form of its tales, appears in the diversity of form in which the life of various tribes of the North Pacific coast is mirrored in their traditional lore. Although the general form is much the same in all, the reconstructions based on the evidence of their tales exhibit sharp individualization, and emphasize the differences in social organization, in social customs,

in the importance of the secret societies, and in the great diversity in the use of crests and other supernatural gifts. A perusal of the available collections makes it quite clear that in this sense the expression of the cultural life of the people contained in their tales gives to them a marked individuality, no matter what the incidents constituting the tales may be.

The reflection of the tribal life, which is characteristic of the tale, is also expressed in the mass of supernatural concepts that enter into it and form in part the scenic background on which the story develops, in part the machinery by means of which the action progresses. Wundt[1] and Waterman have called attention to the importance of distinctions between mythical concepts and tales. The cosmological background does not enter with equal intensity into the folk-tales of various groups. The Eskimo, who have clearly defined notions regarding the universe, do not introduce them to any great extent into their tales; while the various classes of fabulous tribes and beings, shamanism and witchcraft, occupy a prominent place. On the North Pacific coast the notions regarding the universe are on the whole vague and contradictory; nevertheless visits to the sky play an important rôle in the tales. The ideas regarding a ladder leading to heaven, and journeys across the ocean to fabulous countries, also enter into the make-up of the Northwest-coast traditions. In the South, on the other hand, the notions in regard to the centre of the world, the lower world, and the four points of the compass, are of importance.

The groups of fabulous beings that appear in each area exhibit also sharp characteristics; as the ice giants of the Iroquois and eastern Algonkin, the stupid giants of the Shoshoni and Kutenai, or the water-monsters of the South, the horned serpents of eastern America, the double-headed serpent of the coast of British Columbia, the giant thunder-bird of Vancouver Island, and the various forms of thunderers that are found among the different tribes of the continent.

Skinner[2] has recently called attention to the magical machinery that appears in the tales of human adventure among the Central Algonkin tribes. These features also characterize the tales of different areas.

[1] Wilhelm Wundt, Völkerpsychologie, vol. ii, part 3 (1909), p. 19.

[2] A. Skinner, Journal of American Folk-Lore, vol. xxvii (1914), pp. 97–100.

This subject has not been analyzed in sufficient detail to allow a definite grouping, but enough is known to indicate that a natural arrangement will result which will largely conform to cultural divisions.

This feature is still further emphasized when we direct our attention to the main plot of the story. I have shown that among the Kwakiutl the plot of most stories is the authentication of the privileges of a social division or of a secret society. Wissler has brought out a similar point in his discussion of Blackfoot tales,[1] many of which seem to explain ritualistic origins, the rituals themselves being in part dramatic interpretations of the narratives. The Pawnee and Pueblo stories reflect in the same way the ritualistic interests of the people. In this sense we may perhaps say without exaggeration that the folk-tales of each tribe are markedly set off from those of all other tribes, because they give a faithful picture of the mode of life and of the chief interests that have prevailed among the people during the last few generations. These features appear most clearly in the study of their hero-tales. It is therefore particularly in this group that an analogy between the folk-tale and the modern novel is found. The tales dealing with the feats of men are more plastic than those relating to the exploits of animals, although the animal world, to the mind of the Indian, was not so very different from our own.

The events occurring among the animals are less individualized so far as the tribal mode of life is concerned. At best we may infer from them whether we deal with buffalo-hunters of the Plains, fishermen of the Western coast, people of the Arctic or of the Southern desert. The more complex activities of the tribe appear rarely pictured in them, and then only incidentally.

In the human tale the narrator gives us a certain amount of characterization of individuals, of their emotions, — like pity and love, — of their courage and cowardice, on which rests the plot of the story. The development of individual character does not proceed beyond this point. We do not find more than schematic types, which are, however, forms that occur in the every-day life of the people. On the contrary, the origin and trickster cycles deal with types that are either so impersonal that they do not represent any individual, or are merely the personification of greed, amorousness, or silly ambition. Wherever

[1] Clark Wissler and D. C. Duvall, Mythology of the Blackfoot Indians (Anthropological Papers, American Museum of Natural History, vol. ii, p. 12).

there is individuality of character, it is rather the expression of the apparent nature of the personified animal, not the character that fits particularly well into human society.

Considering the characteristics of the human tale as a whole, we may say that in all probability future study will show that its principal characteristics may be well defined by the cultural areas of the continent. How close this correspondence may be remains to be seen. The problem is an interesting and important one, because it is obvious that the tales, while readily adaptable, do not follow all the aspects of tribal life with equal ease, and a certain lack of adjustment may become apparent. This will serve as a valuable clew in the further study of the development of tribal customs and of the history of the distribution of tales. I have pointed out the probability of such incomplete adjustment in the case of the Kwakiutl, and Wissler has made a similar point in regard to the Blackfeet.

While much remains to be done in the study of the local characteristics of folk-tales in regard to the points referred to, a still wider field of work is open in all that concerns their purely formal character, and I can do no more than point out the necessity of study of this subject. On the basis of the material hitherto collected, we are hardly in a position to speak of the literary form of the tales. I am inclined to count among their formal traits the typical repetition of the same incident that is found among many tribes; or the misfortunes that befall a number of brothers, until the last one is successful in his undertaking. These have the purpose of exciting the interest and leading the hearer to anticipate the climax with increased eagerness. Quite different from this is a device used by the Tsimshian, who lead up to a climax by letting an unfortunate person be helped in a very insignificant way. The help extended to him becomes more and more potent, until the climax is reached, in which the sufferer becomes the fortunate possessor of power and wealth.

Another artistic device that is used by many tribes to assist in the characterization of the actors is the use of artificial changes in speech. Thus among the Kwakiutl the Mink cannot pronounce the sound *ts*, among the Kutenai Coyote cannot pronounce *s*, among the Chinook the animals speak different dialects. Dr. Sapir[1] has called

[1] E. Sapir, "Song Recitative in Paiute Mythology" (The Journal of American Folk-Lore, vol. xxiii, 1910, pp. 456–457).

attention to the development of this feature among the Shoshoni and Nootka.

The literary style is most readily recognized in the poetic parts of tales; but, since these fall mostly outside of the purely narrative part of the stories, I do not enter into this subject. We may contrast the simplicity of style of the Northwest coast — where poems consist sometimes of the introduction of a single word into a musical line, the music being carried on by a burden, sometimes of a purely formal enumeration of the powers of supernatural beings — with the metaphoric expression and fine feeling for beauty that pervade the poetry of the Southwestern Indians. Equally distinct are the rhythmic structures that are used by the Indians of various areas.[1] We must be satisfied here with a mere hint at the significance of these data. The desire may be expressed, however, that greater care should be taken in the collection of the material to make possible a thorough study of this aspect of our subject.

V. RECENT HISTORY OF AMERICAN FOLK-TALES

Our considerations allow us to draw a number of inferences in regard to the history of American folk-tales. We have seen that there is no tribe in North America whose tales can be considered as purely local products uninfluenced by foreign elements. On the contrary, we have found that some tales are distributed over almost the whole continent, others over more or less extended parts of the country. We have seen, furthermore, that the tales of each particular area have developed a peculiar literary style, which is an expression of the mode of life and of the form of thought of the people; that the actors who appear in the various tales are quite distinct in different parts of the country; and that the associated explanatory elements depend entirely upon the different styles of thought. In one case the tales are used to explain features of the heavenly bodies; in others, forms of the land, of animals or of rituals, according to the chief interests of the people. It is fully borne out by the facts brought forward, that actors, explanatory tendencies, cultural setting, and literary form, of all modern American tales, have undergone constant and fundamental changes.

[1] See, for instance, Alice C. Fletcher, The Hako (22d Annual Report of the Bureau of American Ethnology, part 2, pp. 282–368).

If we admit this, it follows that the explanations that are found in modern tales must be considered almost entirely as recent adaptations of the story, not as its integral parts; and neither they nor the names of the actors reveal to us what the story may have been in its original form — if we may speak of such a form. Everything appears rather in flux. For this reason the attempt to interpret the history of the modern tale as a reflection of the observation of nature is obviously not justifiable. The data of American folk-lore do not furnish us with a single example that would prove that this process has contributed to the modern development of folk-tales. It would almost seem safer to say that the creative power that has manifested itself in modern times is very weak, and that the bulk of our tales consist of combinations and recombinations of old themes. At the same time the marked differentiation in the style of composition shows that the mainspring in the formation of the modern tale must have been an artistic one. We observe in them not only the result of the play of imagination with favorite themes, but also the determination of the form of imaginative processes by antecedent types, which is the characteristic trait of artistic production of all times and of all races and peoples. I am therefore inclined to consider the folk-tale primarily and fundamentally as a work of primitive art. The explanatory element would then appear, not as an expression of native philosophy, but rather as an artistic finishing touch required for the tale wherever the art of story-telling demands it. Instead of being the mainspring of the story, it becomes in one case a stylistic embellishment, while in another it is required to give an impressive setting. In either case the occurrence of the explanation cannot be reduced to a rationalizing activity of primitive man.

In a sense these results of our studies of American folk-lore are unsatisfactory, because they lead us only to recognize a constant play with old themes, variations in explanatory elements attached to them, and the tendency to develop various types of artistic style. They do not bring us any nearer to an understanding of the origin of the themes, explanations, and styles. If we want to carry on our investigation into a remoter past, it may be well to ask, first of all, how long the present development of mosaics of different style may have continued; whether there is any proof that some tribes have been the originators

from whom others derived much of their lore; and whether we have any evidence of spontaneous invention that may have influenced large territories.

Since historical data are not available, we are confined to the application of an inductive method of inquiry. We may ask how large a portion of the folk-tales of a tribe are its sole property, and how many they share with other tribes. If a comparison of this kind should show a large number of elements that are the sole property of one tribe, while others have only little that is their exclusive property, it would seem justifiable to consider the former as originators, the latter as recipients; and we may conclude either that their own older folk-tales have disappeared or that they possessed very few only. It is not easy to form a fair judgment of the originality of the folk-tales of each tribe in the manner here suggested, because the collections are unequally complete, and because collectors or narrators are liable to give preference to one particular kind of tale to the exclusion of others. It is always difficult to base inferences on the apparent absence of certain features that may be discovered, after all, to exist; and this seems particularly difficult in our case. Still it might be possible to compare at least certain definite cycles that have been collected fairly fully, and that occur with equal exuberance in various areas; as, for instance, the trickster cycles of the Plains. On the whole, I gain the impression that not a single tribe appears as possessing considerably more originality than another.

One interesting point appears with great clearness; namely, the power of tales of certain types to become a prolific source of tales of similar import, provided the original tales are of social importance in the life of the people. Thus the Kwakiutl have apparently a considerable originality among their neighbors on the North Pacific coast, because all the numerous social divisions and secret societies of the tribe possess origin tales of the same type; so that a complete list would probably include hundreds of stories more or less strictly built on the same pattern. The ritualistic tales of the Blackfeet form another group of this kind; and the same may be true of the tales of the Mackenzie area dealing with the marriages between human beings and animals. In these cases we deal with one particular style of story, that has gained great popularity, and therefore appears in an endless number of variants.

Another condition that may lead to a strong individuality in a certain group develops when the tales are placed in the keeping of a small class of priests or chiefs, as the case may be. The more important the tale becomes on account of its association with the privileges and rituals of certain sections of the tribe, and the greater the emotional and social values of the customs with which it is associated, the more have the keepers of the ritual brooded over it in all its aspects; and with this we find a systematic development of both tale and ritual. This accounts for the relation between the occurrence of complex rituals in charge of a priestly class or of chiefs, and of long myths which have an esoteric significance. The parallelism of distribution of religious or social groups led by single individuals and of complex mythologies is so striking, that there can be little doubt in regard to their psychological connection. The Mexicans, the Pueblo tribes, the Pawnee, the Bellacoola, the Maidu,[1] may be given as examples. The contrast between a disorganized mass of folk-tales and the more systematic mythologies seems to lie, therefore, in the introduction of an element of *individual* creation in the latter. The priest or chief as a poet or thinker takes hold of the folk-traditions and of isolated rituals and elaborates them in dramatic and poetic form. Their systematization is brought about by the centralization of thought in one mind. Under the social conditions in which the Indians live, the keeper transfers his sacred knowledge in an impressive manner to his successor. The forms in which the sacred teachings appear at the present time are therefore the cumulative effect of systematic elaboration by individuals, that has progressed through generations.

This origin of the complex of myth and ritual makes it also intelligible why among some tribes the myths of sub-groups should be contradictory. An instance of this are the Bellacoola, among whom the tradition is in the keeping of the chief of the village community, and among whom each community has a different concept in regard to its origins. These contradictory traditions are the result of individual thought in each community, and do not come into conflict, because

[1] Roland B. Dixon, who has pointed out the systematic character of their mythology, finds some difficulty in accounting for it, considering the simple economic and artistic life of the people. His own descriptions, however, show the great importance of personal leadership in all religious affairs of the tribe (Bull. Am. Mus. Nat. Hist., vol. xvii).

the audience identifies itself with the reciting chief, and the truth of one poetic creation does not destroy the truth of another one.

For a correct interpretation of these art-productions we must also bear in mind that the materials for the systematic composition are the disconnected folk-tales and lesser rites of the tribe, which have been welded into a whole. From a psychological point of view, it is therefore not justifiable to consider the exoteric tales, as is so often done, degenerate fragments of esoteric teaching. It is true that they themselves undergo changes due to the influence of the priestly doctrine, but there is a constant giving and taking; and nowhere in America has the individual artist freed himself of the fetters of the type of thought expressed in the disjointed folk-tales. The proof for this contention is found in the sameness of the elements that enter into the tales of tribes with systematic mythology and of those without it.

The only alternative explanation of the observed phenomenon would be the assumption that all this material had its origin in more highly developed and systematized mythologies. It might be claimed that the remains of the Ohio mounds, the highly-developed artistic industries of the ancient inhabitants of the Lower Mississippi, and of the cliff-dwellings, prove that a high style of civilization must have existed in many parts of the country, where at a later period only less complex cultural forms were found. The elaborateness of religious ceremonial of these times is proved by the characteristics of archæological finds. It is quite true that in the border area of Mexico, including under this term the whole region just mentioned, many fluctuations in cultural development must have occurred; but this does not prove their existence over the whole continent. Furthermore, the individuality of each folk-loristic area is such, that we must count the imaginative productiveness of each tribe as an important element in the development of the present situation. From this point of view, inquiries into the independence of each area, rather than investigations of the effect of diffusion, will be of the greatest value. The theory of degeneration is not suggested by any facts; and I fail entirely to see how the peculiar form of American systematic mythology can be explained, except as the result of an artistic elaboration of the disconnected folk-tales, and how the arbitrary character of its thought, which parallels

primitive concepts, can be interpreted, except as the result of priestly speculation preceding the formation of the themes found in folk-tales.

VI. MYTHOLOGICAL CONCEPTS IN FOLK-TALES

Our consideration of American folk-tales has so far dealt with their later history. The result of this inquiry will help us in the treatment of the question, What may have been the origin of these tales? It is obvious that in an historical inquiry for which no literary record of ancient mythology is available, we must try first of all to establish the processes that are active at the present time. There is no reason for assuming that similar processes should not have been active in earlier times, at least as long as the types of human culture were approximately on the same level as they are now. The art-productions of the Magdalenian period show how far back the beginning of these conditions may be placed; and so far we have no evidence that indicates that the American race as such has ever passed through a time in which its mental characteristics were different from those of modern man. The antiquity of cultural achievement in Mexico, the finds made in ancient shell-heaps, prove that for thousands of years man in America has been in possession of a type of cultural development not inferior to that of the modern, more primitive tribes. It may therefore be inferred that the processes that are going on now have been going on for a very long period. Constant diffusion of the elements of stories, and elaboration of new local types of composition, must have been the essential characteristic of the history of folk-tales. On the whole, invention of new themes must have been rare; and where it occurred, it was determined by the prevailing type of composition.

Disregarding the actors that appear in the stories, their contents deal almost throughout with events that may occur in human society, sometimes with plausible events, more often with fantastic adventures that cannot have their origin in actual human experiences. From these facts two problems develop that have given rise to endless speculation and discussion, — the first, Why are these human tales told of animals, of the heavenly bodies, and of personified natural phenomena? the other, Why is it that certain fantastic elements have a world-wide distribution?

The transfer of human experience to animals and personified objects

has given rise to the view that all tales of this type are nature myths or an expression of the naïve primitive conception of nature. It has been clearly recognized that the themes are taken from human life, and used to express the observation of nature. The first question to be answered is therefore, How does it happen that the tales are so often removed from the domain of human society? Wundt has discussed this question in his comprehensive work on mythology,[1] in so far as the personification of nature is concerned. This discussion refers to mythological concepts, not to the tales as such. It is obvious, however, that once the human character of animals and objects is given, the tales become applicable to them.

Another element may have helped in the development of animal tales, once the personification was established. In folk-tales each human being is considered as a distinct individual, and the mere name of a person does not characterize the individual. Moreover, named individuals are not very common in American folk-tales. The animal, on the other hand, is immortal. From the bones of the killed game arises the same individual hale and sound, and thus continues its existence indefinitely. Therefore the species, particularly in the mythological period, is conceived as one individual, or at most as a family group. This may also have helped to create the normative character of the tales. If an animal rubbed the hair off its tail, then all animals that are its descendants have the same kind of a tail. If all the thunder-birds were killed except one, their loss of power becomes permanent. I presume the identification of species and of individuals which is inherent in the personification of nature was an important element contributing to the development of this concept. It goes without saying that the result was not obtained by conscious reasoning. The substitution of individual for species merely favored the explanatory features of animal tales. The tendency to substitute for these transformations others in which events were due to the decision of a council, or where they were ordained by a culture-hero, may be due to a feeling of dissatisfaction with the simple type of transformation and the condensation of the whole species into one individual.

In all these tales the explanatory element must be considered as an idea that arose in the mind of the narrator suddenly by an associative

[1] Vol. ii, part 1 (1905), pp. 577 *et seq.*

process. I differ from Wundt in the importance that I ascribe to the looseness of connection between explanatory elements and the tale, a phenomenon to which he also refers.[1] It is not simply the apperceptive process, in which the subjective emotions are transferred to the object, that gives rise to the explanatory element in the tales; but the elements of mythological concepts are thoughts suggested first of all by the appropriateness of the pre-existing tale, and therefore depended in the first instance upon its literary form. For this reason the great difference in the character of folk-tales of America and those of Africa does not appear to me as a difference in the stages of their development. The moralizing tendency of the African tale is an art-form that has been typical for the Negro, but foreign to the American; and I can see no genetic connection between the explanatory and the moralizing tale.

While these considerations make the animal tale intelligible, they are not by any means a satisfactory explanation of the great importance of animal and nature tales in the folk-lore of all the people of the world; and it would seem that at present we have to accept this as one of the fundamental facts of mythology, without being able to give an adequate reason for its development.

The last question that we have to discuss is the significance of those traits of folk-lore that are of world-wide occurrence. Particularly in reference to this fact the claim is made that the wide distribution of the same elements can be explained only when we assume that they are derived from a direct observation of nature, and that for this reason they appear to primitive man as obvious facts. This subject has been treated fully by Ehrenreich[2] and other representatives of that mythological school which derives the origin of myths from the impressions that man received from nature, particularly from the heavenly orbs.

So far as I can see, all that has been done by these investigations is to show that when we start with the hypothesis that myths are derived from the impressions conveyed by the heavenly bodies, we can fit the incidents of myths into this hypothesis by interpreting their

[1] Part 3, p. 183.

[2] P. Ehrenreich, Die allgemeine Mythologie und ihre ethnologischen Grundlagen, pp. 100 *et seq.*

features accordingly. Lessmann[1] even goes so far as to state definitely that whatever cannot be derived from characteristics of the moon is not mythology. This, of course, ends all possible discussion of the relation between folk-tales and myths. In the passage referred to, Ehrenreich says that the phases of the moon produce certain types of myths. The new moon is represented in the supernatural birth through the side of the mother, and in the incident of a new-born hero lying in a manger or shell. The full moon is the hero in the fulness of his power and after his victories over dark demons. The waning of the moon is the cutting-up or the slow swallowing of the hero's body. The new moon is represented in decapitations with a sword, in test by fire, or in the cutting of sinews. In this enumeration of interpretations I cannot see any proof of his thesis, since he does not show that the same ideas may not have developed in some other way.[2]

Ehrenreich and other adherents of the modern cosmogonic school make the fundamental assumption that myths must represent phenomena actually seen,—a theory that seems to me based on a misconception of the imaginative process. The productions of imagination are not by any means the images of sense-experiences, although they are dependent upon them; but in their creation the emotional life plays an important rôle. When we are filled with an ardent desire, imagination lets us see the desire fulfilled. As a phenomenon strikes us with wonder, its normal features will be weakened and the wonderful element will be emphasized. When we are threatened by danger, the cause of our fear will impress us as endowed with extraordinary powers. It is a common characteristic of all these situations that the actual sense-experience may either be exaggerated or turned into its opposite, and that the impossible fulfilment of a wish is realized. After the death of a dear relative, neither we nor primitive man speculate as to what may have become of his soul; but we feel a burning wish to undo what has happened, and in the free play of fancy we see the dead come back to life. The slain leader in battle whose dismembered body is found, is seen restored to full vigor. The warrior surrounded by enemies, when all means of retreat are cut off, will wish

[1] H. Lessmann, Aufgaben und Ziele der vergleichenden Mythenforschung (Mythologische Bibliothek, I[4], pp. 31 *et seq.*).

[2] See also the criticism of A. van Gennep, in his Réligions, moeurs et légendes, pp. 111 *et seq.*

to pass unseen through the ranks of the foes, and in a strong imagination the wish will become a reality. Many of the ideas that are common to all mythologies may thus be readily understood, and there is no need to think of the waning and waxing moon when we hear of the cutting-up or flaying of a person, and of his revival. These are ideas that are readily suggested by the very fact that the ordinary processes of imagination must call them forth.

No less is this true in the forms of demons which can easily be understood as fanciful distortions of experiences. Laistner's theory of the importance of the nightmare [1] as giving rise to many of these forms is suggestive; perhaps not in the sense in which he formulates it, — because the form of the nightmare will in all probability depend upon the ideas that are current in the belief of the people, — but because dreams are simply one form in which the creations of imagination appear, and because they indicate what unexpected forms the fear-inspiring apparition may take. Still other mythic forms may be explained by the æsthetic transformations produced by the power of imagination. It is not only that the beauty of form is exaggerated, but the comic or tragic elements lead equally to transformations of sense-experience. I think it is quite possible to explain in this way the beautiful shining persons with bright hair, and also the cripples with distorted bodies, covered with warts and other disfigurements.

In short, there is hardly a single trait of all the mythologies that does not reflect naturally, by exaggeration or by contrast, the ordinary sense-experiences of man. It is only when we deny that these processes are characteristic of the imagination that we are confronted with any difficulty, and that we have to look for the origin of these forms outside of human society. As compared to this very simple view of the origin of the elementary forms of myths, the attempt to seek their prototypes in the sky seems to my mind far-fetched. It may also be said in favor of this view, that the combination of features that are demanded as characteristic of the sun, the moon, or other personified beings, appear only seldom combined in one and the same mythical figure. This has been clearly demonstrated by Lowie.[2]

These considerations show also that psychological conditions may

[1] Ludwig Laistner, Das Rätsel der Sphinx.

[2] Robert H. Lowie, "The Test-Theme," etc. (Journal of American Folk-Lore, vol. xxi, 1908, p. 101).

bring about similarity of ideas without an underlying historical connection, and that the emphasis laid on the historical side must be supported by careful inquiry into those features in the life of man that may be readily explained by similarities in the reactions of the mind. Methodologically the proof of such independent origin of similar phenomena offers much more serious difficulties than a satisfactory proof of historical connection. The safeguards that must be demanded here are analogous to those previously described.[1] As we demanded before, as criteria of historical connection, actual evidence of transmission, or at least clear proof of the existence of lines of transmission and of the identity of subject-matter, so we must now call for proof of the lack of historical connection or of the lack of identity of phenomena. Obviously these proofs are much more difficult to give. If we were to confine ourselves to the evidence contained in folk-tales, it might be an impossible task to prove in a convincing manner the independent origin of tales, because the possibility of the transmission of a single idea always exists. It is only on the basis of our knowledge of the limitations of areas over which inventions, art-forms, and other cultural achievements, have spread, that we can give a basis for safer conclusions. On account of the sharp contrast between America and the Old World in the material basis of civilization, and the restriction of imported material to the northwestern part of the continent, to which we have already referred, we are safe in assuming that similar cultural traits that occurred in pre-Columbian time in the southern parts of the two continental areas are of independent origin. In more restricted areas it is all but impossible to give satisfactory proof of the absence of contact.

More satisfactory are our means for determining the lack of identity of apparently analogous phenomena. Historical inquiry shows that similar ideas do not always arise from the same preceding conditions; that either their suggested identity does not exist or the similarity of form is due to an assimilation of phenomena that are distinct in origin, but develop under similar social stress. When a proof of this type can be given, and the psychological processes involved are clearly intelligible, there is good reason for assuming an independent origin of the ideas.

[1] See p. 314.

A case in point is presented by the so-called "sacred" numbers.[1] I am not inclined to look at these primarily as something of transcendental mystic value; it seems to me more plausible that the concept developed from the æsthetic values of rhythmic repetition. Its emotional effect is obviously inherent in the human mind; and the artistic use of repetition may be observed wherever the sacred number exists, and where it is not only referred to a number of distinct objects, but is also used in repetitions of tunes, words, elements of literary composition and of actions. Thus the difference in favorite rhythms may account for the occurrence of different sacred numbers; and since the preference for a definite number is a general psychological phenomenon, their occurrence must not be due to historical transmission, but may be considered as based on general psychological facts. The differences between the sacred numbers would then appear as different manifestations of this mental reaction. In the same way the idea of revival of the dead, or of the power to escape unseen, is simple reaction of the imagination, and is not due, wherever it occurs, to a common historical source. These ideas develop naturally into similar incidents in stories that occur in regions widely apart, and must be interpreted as the effect of psychological processes that bring about a convergent development in certain aspects of the tales. An instructive example is presented by the tales of the origin of death. The idea of the origin of death is readily accounted for by the desire to see the dead alive again, which often must have been formulated as the wish that there should be no death. The behavior of man in all societies proves the truth of this statement. Thus the imaginative processes are set in motion which construct a deathless world, and from this initial point develop the stories of the introduction of death in accordance with the literary types of transformation stories. The mere occurrence of stories of the origin of death — in one place due to the miscarriage of a message conveyed by an animal, in others by a bet or a quarrel between two beings — is not a proof of common origin. This proof requires identity of the stories. We can even understand how, under these conditions, stories of similar literary type may become almost identical in form without having a common origin. Where the line is to be drawn between these two types of development cannot be

[1] See also p. 336.

definitely decided. In extreme cases it will be possible to determine this with a high degree of probability; but a wide range of material will always remain, in which no decision can be made.

The limitation of the application of the historical method described here defines also our attitude towards the Pan-Aryan, and Pan-Babylonian theories. The identification of the elements of different folk-tales made by the adherents of these theories are not acceptable from our methodological standpoint. The proofs of dissemination are not of the character demanded by us. The psychological basis for the assumption of an imaginative unproductiveness of all the races of man, with the exception of one or two, cannot be proved; and the origin of the myth in the manner demanded by the theories does not seem plausible.

The essential problem regarding the ultimate origin of mythologies remains, — why human tales are preferably attached to animals, celestial bodies, and other personified phenomena of nature. It is clear enough that personification makes the transfer possible, and that the distinctness and individualization of species of animals and of personified phenomena set them off more clearly as characters of a tale than the undifferentiated members of mankind. It seems to me, however, that the reason for their preponderance in the tales of most tribes of the world has not been adequately given.[1]

[1] For references to literature see Robert H. Lowie, "The Test-Theme," etc. (Journal of American Folk-Lore, vol. xxi, pp. 146–148); T. T. Waterman, "The Explanatory Element," etc. (*Ibid.*, vol. xxvii, pp. 50–54); also footnote 4, p. 317.

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THE SOCIAL ORGANIZATION OF THE INDIANS OF NORTH AMERICA

By A. A. GOLDENWEISER

I. HISTORICAL NOTE

THE credit for giving a firm foundation to the problems of social organization, and for impressing their importance upon the minds of American anthropologists, belongs indubitably to Lewis H. Morgan. He derived his early inspiration for Indian study from his life among the Seneca-Iroquois, by whom he was adopted and regarded as one of their own. His knowledge of Iroquois life and lore was as wide as it was deep, and it bore fruit in the famous "League of the Iroquois" (1851), — a work in which accurate observation and sweeping generalization, scientific sanity, and ethnological naïveté, went hand in hand. Since the appearance of that work, Morgan has been justly recognized as the co-discoverer with McLennan and Bachofen, of the maternal system of kinship organization. While studying the Iroquois clan system, Morgan's attention was attracted by their method of counting relationships. With that keen sense for the significant so characteristic of big minds, Morgan was quick to grasp the wide bearing of his discovery. Not satisfied with his Iroquois achievements, he extended his personal investigations over many Indian tribes of North America; and through a system of *questionnaires*, which he sent out to scholars and field-workers in foreign lands, he amassed in an amazingly short time a huge store of data on the social organization and relationship systems of many primitive tribes in Africa and Australia, India and the South Seas. The results of his activities were given to the world in his "Ancient Society" (1877), still an anthropological classic; "Houses and House-Life among American Indians" (1881); and "The Systems of Consanguinity and Affinity of the Human Family," [1] one of the most famous, if least read, works in the entire field of ethnology. It comprises the concrete data of some eighty relationship systems, together with Morgan's interpretation of such systems as reflections

[1] Smithsonian Contributions to Knowledge, vol. xvii, 1871.

of forms of marriage. Morgan was a whole-hearted evolutionist. In his "Ancient Society" he outlined the economic development of mankind "from savagery through barbarism to civilization," rediscovered the primitive clan and phratry in the social institutions of the Greeks and the Romans, and traced the history of social organization, everywhere substantially the same, from its early beginnings in a maternal kinship system, through a paternal kinship system, and up to its final disruption at the dawn of modern society, when the ties of blood were forced to give way before the less intimate but more economically significant ties of the ground, of territorial cohabitation.

In the course of time, serious errors of fact and judgment were discovered in Morgan's work. Intensive exploration in many regions of the American area brought to light facts of social organization unknown to Morgan or underestimated by him. Critical thinking along theoretical lines, on the general background of anti-evolutionary tendencies, went far to discredit the sweeping generalizations of Morgan's time. Thus we find that John R. Swanton, in his articles on "The Social Organization of American Tribes" [1] and "A Reconstruction of the Theory of Social Organization," [2] represents views on social organization that are less sweeping in their bearings, more critical in their use of ethnological material, and in far better accord with ascertained fact. At the hand of American evidence, Swanton showed that clan and gentile systems did not exhaust the fundamental forms of social organization; that a less definite system, based on the individual family and the local group, was at least as prevalent in North America as the clan and the gens; that the tribes organized on the clan basis represented, on the whole, a higher culture than the clanless ones; that evidence did not support the assumption of a pre-existing maternal system in tribes now organized on the paternal basis; and that convincing evidence could be produced for the diffusion of social systems.

Most recent explorations, as well as further theoretical analysis, have fully vindicated Swanton's conclusions. In an article on "Social Organization" [3] published less than a year ago, Robert H. Lowie reviewed, under the guise of a critique of Morgan, some of the most recent work on social organization. He found himself in complete agreement with Swanton's conclusions, and was able, in addition, to

[1] American Anthropologist, 1905.

[2] Boas Anniversary Volume, Anthropological Papers, 1906.

[3] The American Journal of Sociology, 1914.

point out, at the hand of relevant data, that the problem of inheritance of property and office was in part distinct from that of group descent; that the psychological nature of kinship groups was variable; that the relations between phratries and clans or gentes were far more complex than formerly supposed; and that the regulation of marriage was not a feature invariably, or solely, or fundamentally, connected with kinship groups.

In the short space allotted to this article an extensive survey of American data on social organization cannot be attempted, nor do I propose to discuss all the interesting theoretical aspects of that subject. The problem of totemism, as well as that of the classificatory systems of relationship, of which we have heard so much lately, will be left aside altogether. Exogamy and the relation of phratries and moieties to clans and gentes, both problems ripe for systematic discussion, will be treated very briefly. No mention will be made of the distribution of such so-called social customs as the mother-in-law taboo or joking relationships, or of the theoretical questions connected with these customs. The theoretical problems selected for discussion, as well as the illustrative material used in the following pages, have been determined by more or less arbitrary considerations.

II. THE SOURCES

Not all parts of the Eskimo area have so far been thoroughly described; but the works of Boas,[1] Nelson,[2] Murdoch,[3] and Turner[4] give us a satisfactory picture of the social system and habits of the Eskimo, — a picture not likely to be seriously modified by further exploration. The data dealing with the tribes of the Northwest coast and southern Alaska are, on the whole, fairly complete. Here we have to rely on the older sources, such as Dawson, Niblack, and Swan; the later work by Boas for the British Association for the Advancement of Science; the still more recent work of the Jesup North Pacific Expedition, to which Boas, Swanton, and Smith have contributed;

[1] F. Boas, The Central Eskimo (6th Annual Report of the Bureau of Ethnology, 1884–85); and The Eskimo of Baffin Land and Hudson Bay (Bulletin of the American Museum of Natural History, vol. xv, Parts 1 and 2, 1901).

[2] E. W. Nelson, The Eskimo about Bering Strait (18th Annual Report of the Bureau of American Ethnology, 1896–97, Part I).

[3] J. Murdoch, Ethnological Results of the Point Barrow Expedition (9th Annual Report of the Bureau of Ethnology, 1887–88).

[4] L. M. Turner, Ethnology of the Ungava District (11th Annual Report of the Bureau of Ethnology, 1889–90).

and a preliminary sketch by Sapir,[1] which is to be followed by a full report of his explorations. The forthcoming work by Boas,[2] on the Tsimshian, will, it is to be hoped, throw additional light on the complexities of their social system. Much further information is needed on the social organization of the Tlingit and Bellacoola.

The Athapascan tribes, and for that matter the Eskimo of the Mackenzie area, are very little known. On the tribes of the Plateau area we have the works of James Teit, Charles Hill-Tout, A. B. Lewis,[3] H. J. Spinden,[4] Robert H. Lowie,[5] A. G. Morice,[6] and J. Mooney.[7]

[1] Boas, Reports of the British Association for the Advancement of Science, 1888–98; "The Salish Tribes of the Interior of British Columbia," and "The Tribes of the North Pacific Coast" (Annual Archæological Report, 1905. Appendix, Report of the Minister of Education, Toronto, 1906, pp. 219–225 and 235–249); Die soziale Gliederung der Kwakiutl (Proceedings of the International Congress of Americanists,1904, pp. 141–148); The Social Organization and the Secret Societies of the Kwakiutl Indians (Report of the U. S. National Museum for 1895, pp. 311–738); Swanton, Contributions to the Ethnology of the Haida (Publications of the Jesup North Pacific Expedition, vol. v); and Social Condition, Beliefs and Linguistic Relationships of the Tlingit Indians (26th Annual Report of the Bureau of American Ethnology, 1904–05); H. I. Smith, Archæology of Lytton, British Columbia (Publications of the Jesup North Pacific Expedition, vol. i); E. Sapir, "Some Aspects of Nootka Language and Culture" (American Anthropologist, vol. xiii, 1911, pp. 15–28).

[2] Tsimshian Mythology (31st Annual Report of the Bureau of American Ethnology, 1915).

[3] Teit, The Thompson Indians of British Columbia, The Lillooet Indians, and The Shuswap (Publications of the Jesup North Pacific Expedition, vols. i and iii); Hill-Tout, Notes on the Sk'qómic of British Columbia (Report of the British Association for the Advancement of Science, 1900, pp. 472–549); Salish and Dené, London, 1907; "Report on the Ethnology of the Siciatl of British Columbia" (Journal of the Anthropological Institute, vol. xxxiv, 1904, pp. 20–92); "Report on the Ethnology of the Stlatlumh of British Columbia" (*Ibid.*, 1905, pp. 126–219); and "The Salish Tribes of the Coast and Lower Fraser Delta" (Annual Archæological Report, 1905. Appendix, Report of the Minister of Education, Toronto, 1906, pp. 225–235); Lewis, Tribes of the Columbia Valley and the Coast of Washington and Oregon (Memoirs of the American Anthropological Association, vol. i, 1906).

[4] The Nez Percé Indians (Memoirs of the American Anthropological Association, vol. ii, 1908).

[5] The Northern Shoshone (Anthropological Papers of the American Museum of Natural History, vol. ii, 1908).

[6] "The Great Déné Race" (Anthropos, vol. i, 1906, pp. 229–278, 483–509, 695–730; and vol. ii, 1907, pp. 1–31, 181–196); Notes on the Western Dénés (Transactions of the Canadian Institute, vol. iv, 1895); The Western Dénés, third series, vol. vii, 1890; and "The Canadian Dénés" (Annual Archæological Report, 1905. Appendix, Report of the Minister of Education, Toronto, 1906, pp. 181–219).

[7] The Ghost Dance Religion (14th Annual Report of the Bureau of Ethnology, Part ii, 1892–93).

All the tribes of this area are characterized by the so-called "loose," clanless social organization, based essentially on the family and the local group; but the term "loose" in this connection is designative rather of our understanding of the social structure of these tribes than of the structure itself, and a more careful analysis of at least a few of the tribes is much to be desired.

The California data are not much better off. We have, it is true, the works of Roland B. Dixon,[1] A. S. Barrett,[2] and Alfred L. Kroeber;[3] but the larger part of the abundant data of the last-named author remains as yet unpublished.

The Southwest, long-continued exploration notwithstanding, is more remarkable for its puzzles than for its positive data. The more important contributions belong to F. H. Cushing, A. F. Bandelier, J. G. Bourke, Washington Matthews, J. Walter Fewkes, F. W. Hodge, George A. Dorsey, Mrs. M. Stevenson, J. P. Harrington, and Miss Freire-Marreco.[4] The problems presented by the social organization of the Southwest are of supreme interest, but our knowledge of the data is exceedingly imperfect; and nowhere, perhaps, in the North American area, is there more need of systematic study and intensive analysis than here.

[1] The Northern Maidu (Bulletin of the American Museum of Natural History, vol. xvii, 1902 and 1905).

[2] Ethnography of the Pomo, 1908.

[3] Types of Indian Culture in California (University of California Publications, Archæology and Ethnology, vol. ii, 1904).

[4] Zuñi Fetiches (2d Annual Report of the Bureau of Ethnology, 1880–81); Outlines of Zuñi Creation Myths (13th Annual Report of the Bureau of Ethnology, 1891–92); Bandelier, Historical Introduction to Studies among the Sedentary Indians of Mexico (Papers of the Archæological Institute of America, American series, vol. i, 1881); Final Report of Investigations among the Indians of the Southwestern United States (*Ibid.*, vol. iii, 1890; and vol. iv, 1892); Contributions to the History of the Southwestern Portion of the United States (*Ibid.*, vol. v, 1890); "Documentary History of the Zuñi Tribe" (A Journal of American Ethnology and Archæology, vol. iii, 1892); Dorsey, Indians of the Southwest, 1903; Miss Freiro-Marreco, "Tewa Kinship Terms," etc. (American Anthropologist, N. S., vol. xvi, 1914); Goddard, Indians of the Southwest (American Museum of Natural History, Handbook Series No. 2); Harrington, "Tewa Kinship Terms" (American Anthropologist, N. S., vol. xiv, 1912); Hodge, "The Early Navajo and Apache" (*Ibid.*, vol. viii, 1895, pp. 223–241); Matthews, "The Gentile System of the Navajo Indians" (The Journal of American Folk-Lore, vol. iii, 1890, pp. 89–110; compare also Bourke, "Notes upon the Gentile Organization of the Apaches of Arizona," *Ibid.*, pp. 111–126); The Night Chant, a Navaho Ceremony (Memoirs of the American Museum of Natural History, vol. vi, 1902); and The Mountain Chant: a Navajo Ceremony (5th Annual Report of the Bureau of Ethnology, 1883–84); Stevenson, The Sia (11th Annual Report of the Bureau of Ethnology, 1889–90); and The Zuñi Indians (23d Annual Report of the Bureau of American Ethnology, 1901–02).

On the Plains, on the other hand, the situation is much better. Old sources and the data amassed by Lowie, Clark Wissler, Kroeber, and Mooney,[1] throw much light on the social systems of the Blackfoot, Grosventre, Crow, Assiniboin, Arapaho, and Cheyenne, as well as on that of the Dakota.[2] The Omaha also are well known, owing to the early work of J. O. Dorsey and the recent study by Miss Alice C. Fletcher and Frank La Flèche.[3] Further information is needed on the other tribes of the Omaha type, — such as the Oto, Ponca, Osage, Iowa, Kansas, and Missouri, — as well as on the Mandan and Hidatsa, the Kiowa and Comanche, and the Pawnee. Further data on the Mandan, Hidatsa, and Pawnee are soon to be expected.

On the tribes of the Southeast little is known. Fragmentary data by Alanson Skinner[4] on the Seminole, and the somewhat more detailed but on the whole meagre account by Frank G. Speck,[5] of the Yuchi, are the main recent works. Much new material, however, is to be expected in the near future as a result of Swanton's recent work among the Creek and Natchez.[6]

[1] Catlin, Illustrations of the Manners, Customs, and Conditions of the North American Indians (London, 1848); Lewis and Clark, Original Journals of the Lewis and Clark Expedition (Thwaites edition, New York, 1904); Maximilian, Prince of Wied, Travels in the Interior of North America (London, 1843); A. L. Kroeber, The Arapaho (Bulletin of the American Museum of Natural History, vol. xviii, 1902–07), and Ethnology of the Gros Ventre (Anthropological Papers of the American Museum of Natural History, vol. i, 1908); R. H. Lowie, The Assiniboine (*Ibid.*, vol. vi, 1909); and Social Life of the Crow Indians (*Ibid.*, vol. ix, 1912); compare my "Remarks on the Social Organization of the Crow Indians" (American Anthropologist, N. S., vol. xv, 1913, pp. 281–294); J. Mooney, The Cheyenne Indians (Memoirs of the American Anthropological Associaton, vol. i, 1905–07); C. Wissler, Social Life of the Blackfoot Indians (Anthropological Papers of the American Museum of Natural History, vol. vii, 1911).

[2] S. R. Riggs, Dakota Grammar, Texts and Ethnography (Contributions to North American Ethnology, vol. ix, 1893).

[3] J. O. Dorsey, Omaha Sociology (3d Annual Report of the Bureau of Ethnology, 1881–82); and A Study of Siouan Cults (11th Annual Report of the Bureau of Ethnology, 1889–90); Alice C. Fletcher, The Omaha Tribe (27th Annual Report of the Bureau of American Ethnology, 1905–06). For a convenient summary of Plains ethnology, see Wissler, North American Indians of the Plains (American Museum of Natural History, Handbook Series No. 1).

[4] "Notes on the Florida Seminole" (American Anthropologist, N. S., vol. xv, 1913, pp. 63–77); see also C. MacCauley, The Seminole Indians of Florida (8th Annual Report of the Bureau of Ethnology, 1883–84).

[5] Ethnology of the Yuchi (Anthropological Publications of the University of Pennsylvania, vol. i, 1909).

[6] Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico (Bulletin 43 of the Bureau of Ethnology, 1911); and "A Foreword on the Social Organization of the Creek Indians" (American Anthropologist, N. S., vol. xiv, 1912, pp. 593–599). See also A. S. Gatschet, A Migration Legend of the Creek Indians, 1884.

The Woodland data are more satisfactory. Here we have W. J. Hoffman's[1] and A. Skinner's works on the Menominee; P. Radin's Winnebago; fragmentary notes by W. Jones on the Sauk and Fox, Kickapoo, and Ojibwa, recently supplemented by T. Michelson; some data on the Cree by Stewart, J. P. MacLean, and Skinner;[2] and a fairly extensive and accurate literature on the Iroquois, to which William M. Beauchamp, David Boyle, Horatio Hale, Lewis H. Morgan, A. C. Parker, J. N. B. Hewitt,[3] and others have contributed. Among works soon to be expected in print, Radin's Winnebago and Ojibwa, Barbeau's Wyandot, and Speck's Penobscot, deserve special notice.

III. GEOGRAPHICAL DISTRIBUTION

In view of recent work on social organization, which tends to disclose an ever-increasing number of social units to be found among different tribes and in different culture areas, the question may well be asked, whether a classification of, say, the tribes of North America into a clan area, a gentile area, and an area not organized on the kinship basis, is still justifiable. If these types of social units do not exhaust or even represent the greater variety of social units which occur in social systems, such a classification would in itself

[1] The Menomini Indians (14th Annual Report of the Bureau of Ethnology, 1892–93). Compare A. Skinner, Social Life and Ceremonial Bundles of the Menomini Indians (Anthropological Papers of the American Museum of Natural History, vol. xiii, 1913); and "A Comparative Sketch of the Menomini" (American Anthropologist, N. S., vol. xiii, 1911, pp. 551–566).

[2] P. Radin's Winnebago monograph is to be published in the near future by the Bureau of American Ethnology; meanwhile see his preliminary account of "The Clan Organization of the Winnebago" (American Anthropologist, N. S., vol. xii, 1910, pp. 209–220); Jones, "Notes on the Fox Indians" (Journal of American Folk-Lore, vol. xxiv, 1911, pp. 209–238); "Kickapoo Ethnological Notes" (American Anthropologist, N. S., vol. xv, 1913, pp. 332–336); and "Central Algonkin" (Annual Archæological Report, 1905, etc., pp. 136–146); MacLean, Canadian Savage Folk, 1890; Skinner, Notes on the Eastern Cree and Northern Saulteaux (Anthropological Papers of the American Museum of Natural History, vol. ix, 1911).

[3] Beauchamp, History of the New York Iroquois (New York State Museum, Bulletin 78); and Civil, Religious and Mourning Councils and Ceremonies of Adoption (*Ibid.*, Bulletin 113). (Beauchamp's writings on Iroquois topics are numerous, but his language is vague and his work uncritical.) Boyle, "The Iroquois" (Annual Archæological Report, 1905, etc., pp. 146–158). Hale, The Iroquois Book of Rites, 1883. Morgan, The League of the Iroquois, 1901. Parker's and Hewitt's data on the social organization of the Iroquois are not yet available; see, however, Hewitt's articles on Iroquois subjects as well as those on the clan and the family in The Handbook of American Indians (Bulletin 30, Bureau of American Ethnology).

involve an arbitrary restriction of the problems considered. Without discussing the question at this time in greater detail, we might say, however, that, notwithstanding the existence of other social units, the clan, the gens, and the local group remain the fundamental and probably the most ancient forms of social grouping, and, as such, may well serve as a basis for classification. As pointed out by Swanton, the three forms are well represented in North America. The family-village area embraces the Eskimo, the tribes of the Plateau area, the coast tribes from the Nootka to California, and part of the Plains tribes (including the Blackfoot, Assiniboin, Grosventre, Arapaho, Cheyenne, Kiowa, and Comanche). The clan area comprises the Tlingit, Haida, Tsimshian, Bellacoola, Heisla, Heiltsuk, and Kwakiutl of the Northwest coast; most of the tribes of the Southwest; the Crow; probably all the Southeastern tribes; the Iroquois, Wyandot, Menominee, and a few other tribes. To the gentile type belong the Omaha, Ponca, Oto, Kansas, Iowa, Missouri, Dakota, the Winnebago, and some tribes of the Southwest.

It will readily be seen that this distribution fully justifies Swanton's generalization that in North America the tribes with clan and gentile systems are associated with higher cultures than those without kinship groups. No satisfactory evidence has been found in American data supporting the contention that tribes organized on a gentile basis must have passed through a stage characterized by a maternal kinship system. On these two points the American data are highly suggestive; for it seems obvious, and it was pointed out a long time ago by Starcke and Cunow, that a clan or gentile system, in the modern sense (that is, a system based on hereditary kinship groups), could not have constituted the earliest form of social grouping. The kinship group, in its capacity of a social unit with definite functions, as well as in its continuity from generation to generation by means of fixed unilateral descent, displays traits which require long periods for their development. A grouping of such a type presupposes a much simpler, really primitive grouping, based on a natural biological unit (the family), or on a natural territorial unit (the local group), or on both. The two may coincide, the family also constituting the local group, or the latter may comprise several families. The absence of evidence as to the succession of maternal and paternal kinship systems is no less suggestive: for, again, it would be strange indeed if it were found that tribes could change their system of reckoning descent — a most momentous social revolution — without a

concomitant transformation of the social structure. In the absence of evidence for such a process in America, or, for that matter, in other parts of the world, we are justified in regarding the clan-gens succession (one of the corner-stones of the evolutionary scheme of social development) as a gratuitous assumption, — an assumption which raises to the dignity of a law a process that may never have occurred, or, if it has occurred, must certainly be regarded as highly exceptional. In the light of present knowledge and theory, we may perhaps be permitted to advance the hypothesis that the roads that lead from primitive to modern social organization are three in number. The first takes its beginning in a primitive grouping on a family-village basis, with a vague predilection, perhaps, for paternal descent and inheritance; it passes through a stage of kinship grouping with maternal descent, and ends in a family-village grouping with a definite predilection for paternal descent and inheritance. The second is like the first, except that paternal descent takes the place of maternal descent in the middle period. The third is like the first two, except that the stage of kinship grouping with definite unilateral descent is altogether omitted.

IV. DIFFUSION AND PATTERN

The phenomenon of diffusion, notwithstanding its long and honorable history, stands in ill repute among some, at least, of the students of ethnology. In recent years a number of German scientists, with Graebner at the head, have revealed themselves as enthusiastic champions of the principle of diffusion of culture. They have, in fact, idolized the principle, and worship at its shrine. They have not succeeded, however, perhaps through excess of zeal, in altogether ridding the phenomenon of diffusion of that strange halo of unreality, of something exceptional and negligible, which has surrounded it ever since the evolutionist first saw in diffusion the arch-enemy of organic development, the principal "disturbing influence" which marred the orthodox developmental processes through "inner growth." It thus behooves the fair-minded ethnologist to give diffusion its due. Evidence is not lacking in North America of the spread of features of social organization and of entire systems from tribe to tribe. The processes have been most carefully observed in the Northwest coast area and along the line of contact between the coast culture and the Athapascan and Salish tribes of the Plateau. The evidence is conclusive. The Athapascan neighbors of the Tlingit

have borrowed the dual organization of the latter. The Eskimo neighbors of the same tribe, without borrowing the social framework, have adopted the ceremonial performances and paraphernalia associated with that framework. Similarly the Babine, neighbors of the Tsimshian, have borrowed from them the four-clan division and the institution of maternal descent. The western Shuswap share with the coast people a division into castes and hereditary crest-groups, which, among the Shuswap, tend to be exogamous. The case of the Lillooet is most interesting, however; for here we find all the essential traits of the social fabric of the coast engrafted upon a tribe of a fundamentally different type. The resulting composite, however, looks, for special reasons, so genuine (in the classic evolutionary sense), that, but for the historical evidence, its complex derivation would not be suspected. At this point I may be pardoned for quoting a footnote from a former work:—

"It certainly is a curious play of circumstances that just among the Lillooet a full-fledged belief in descent from the totem should be found. We can only guess at the origin of this feature, but the process suggested before seems at least plausible: as the clan of the coast fused with the village community of the interior, the crest of the clan became identified with the human ancestor of the villagers; thus the clanmen came to believe in their descent from the eponymous animal.

"A stray traveller, ignorant of local conditions, would probably describe the Lillooet as a community organized along the lines of classical totemism: he would mention totemic clans with animal names, and descent from the totem; clan exogamy, possibly in a state of decay, for which relationship exogamy would easily be mistaken; while traces of totemic taboos could be found in the many prohibitions against the killing and eating of certain animals prevalent in that area. If not for such facts as the paternal and maternal inheritance of clan membership, which might set our traveller on the right track, he could hardly suspect that what he stamped as classical totemism was really due to the engrafting of an heretical totemism upon a non-totemic community." [1]

Within the bounds of the Northwest culture there is evidence of the spread of a maternal totemic kinship organization, indigenous among the Tlingit, Haida, and Tsimshian, southward to the Heisla, Heiltsuk, and Kwakiutl, among whom it produces a peculiar mongrel organization of a maternal-paternal type, probably resulting through

[1] Journal of American Folk-Lore, vol. xxiii (1910), p. 284, footnote 1.

the superposition of certain features of a maternal system upon an originally paternal organization.[1] From the Kwakiutl the northern system spread still farther south, transforming into clans the villages of the coast Salish. The Bellacoola have become completely transfigured by the coast culture; but, in place of the usual clan exogamy, we find endogamy in their clans. Elsewhere in North America the spread of social systems from one cultural group to another has not been so carefully observed. Evidence is not lacking, however. From this point of view the social structures of the Western Plains tribes are of interest. Of these, the Blackfoot may serve as an example. They are organized into nicknamed bands, — local groups which appear as units in the camp circle. These bands comprise largely individuals related by blood; and the sense of the blood-bond must be pronounced, for it is given by the Blackfoot as the reason for the tendency towards band exogamy. Descent is paternal; but a woman, after marriage, joins the local group of her husband, and is thenceforth regarded as belonging to that band. Now, this organization of the Blackfoot seems to combine some characteristics of a typical Plateau tribe with traits found among the Siouan tribes of the Eastern Plains area. On the one hand, we find local groups with nicknames, the lack of functions connected with the local groups (other than those referring to the camp circle), and — a trait unthinkable in a gentile or clan system — the custom according to which a woman after marriage changes her band affiliations. So far, all is Plateau type. On the other hand, the sense of relationship in the band is strong; there is a marked tendency towards band exogamy and all but fixed paternal descent of band membership; the bands, moreover, appear as social units with definite functions in the camp circle. In these features we recognize the gentile organization of the Eastern Plains. Now, considering that the tribes of the Western Plains have as their western neighbors tribes of Plateau culture, and as their eastern neighbors the Siouan tribes of the Plains, with both of whom they have been in contact and communication for long periods, it is hardly too much to assert that the mixed type of social organization found on the Western Plains has developed under the combined historical influences of the Plateau and the Eastern Plains.

A survey of social systems in North America reveals another suggestive fact. We find that systems of more or less strikingly similar characteristics are spread over large continuous areas. The tribes

[1] For a more precise characterization of the situation, see my review of Frazer's Totemism and Exogamy, in Current Anthropological Literature, 1913, p. 212.

of the Arctic, Plateau, and California areas, covering a tremendous geographically continuous district, and comprising tribes of varied linguistic affiliations and physical types, are highly comparable in social organization, representing the family-village type, with indeterminate descent, and no clearly-defined social units. On the Northwest coast we find the Tlingit-Haida-Tsimshian group, with a highly complex maternal kinship organization and totemic features. The social systems of these groups present highly striking similarities in details. The Kwakiutl tribes constitute a clan or gentile area of a somewhat different type, with which the Nootka ought, perhaps, to be included. In the Southwest a vast district is inhabited by tribes organized on a maternal kinship basis, with numerous clans, and phratries comprising varying numbers of clans. On the Plains, the western tribes referred to before constitute one strictly comparable group. The Siouan tribes of the Eastern Plains display no less striking similarities in social structure, based on a dual organization, a paternal kinship system, with fairly numerous gentes, of pronounced local and ceremonial associations, and totemic features; in some respects, the Winnebago belong to this group of tribes. In the Woodland area the Iroquois share with a number of Algonquian tribes (such as the Delaware and Shawnee) a maternal kinship system, with a strictly limited number of clans. In the Southeast the data soon to be published indicate a wide area, characterized by numerous clans and a somewhat complex system of higher social units. This distribution of types of social organization can have only one meaning. It would be absurd to suppose that within these continuous areas of similar social systems the separate tribes developed their social structures independently of one another, and that the similarities described above were due to a miraculous series of coincidences. Here, if ever, do the facts of distribution speak for diffusion. What was the precise nature of these processes of diffusion can only be conjectured pending further investigations, but the fact of diffusion itself cannot be doubted. Interpretative work on diffusion has not so far resulted in much positive insight; at this place, only tentative suggestions towards such an interpretation can be attempted. Two radically different historical processes may account for the phenomenon of uniformity over wide areas, — (1) migrations of tribes originally occupying a limited area, and having there developed a social system; (2) spread of a social system, developed in a tribe or group of tribes, to other tribes occupying a wider area, with relative

permanency. In the latter instance the original social system becomes a pattern which determines or influences the systems of more or less distant tribes. Both processes are known to have occurred. The first may be exemplified by the dispersion of the tribes of the Iroquois Confederacy; the second, by historical processes, which, as suggested before, must be held accountable for the composite social systems of the Western Plains.

Before leaving the subject of diffusion, another point of psychological import must be noted. In the phenomena of diffusion from the Northwest coast to the tribes of Eskimo, Athapascan, and Salish lineage, we deal with tribes of different cultural type and radically different social structures. The phenomena of diffusion between the Eskimo and Athapascan, and *vice versâ*, or between the Plateau and Western Plains tribes, refer to groups which, at least in their social systems, are of less distinct characteristics. The spread of social features from the northern to the southern tribes of the Northwest coast follows tribes belonging to a highly uniform culture area (excepting, of course, the Bellacoola). To these facts must be added a phenomenon exemplified among the Kwakiutl, where the entire social structure and life of the people have been patterned after the clan type.[1] The instances here cited constitute a fairly representative series of types of diffusion of a cultural feature, starting with an instance where the tribes in question are strikingly distinct in culture, followed next by one where the cultural differences are less marked, then by one where the diffusion takes place within one cultural area, and winding up with an instance where one cultural feature (the clan) becomes a pattern after which are fashioned diverse other features within one tribe. Now, an analysis of these instances does not suggest any radical differences in the psychological principles involved. It seems that what we discuss under the heading of "pattern theories" when remaining within the limits of culture areas and individual tribes, and what is designated as "diffusion" when intertribal processes or processes between culture areas are involved, belong to one and the same type of psycho-sociological phenomena, and that the differences observed are rather those of specific content of the features involved than of psychological principle.[2]

[1] Compare the unduly neglected article by Boas, "Der Einfluss der sozialen Gliederung der Kwakiutl auf deren Kultur," in the Proceedings of the XIV International Congress of Americanists, (Stuttgart, 1904), pp. 141–148.

[2] Compare the formulation of this point in my "Principle of Limited Possibilities in the Development of Culture" (Journal of American Folk-Lore, vol. xxvi, 1913, pp. 286–287).

V. SOCIAL UNITS AND THEIR FUNCTIONS

According to Morgan's conception, the clan or gens was not only a universal institution belonging to a certain stage of social development, but a social category that was perfectly univocal in its connotations. It carried with it certain definitely fixed functions, which were permanent characteristics of clans or gentes. While this conception of Morgan's could not withstand the scepticism born of evidence accumulated since his time, the tendency to conceive of a clan or gens as of something always like unto itself still survives among anthropologists, and even more markedly so in non-anthropological circles. Morgan taught that a clan or gens was distinguished by the right of electing its sachem and chiefs; the right of deposing its sachem and chiefs; the obligation not to marry in the gens; mutual rights of inheritance of the property of deceased members; reciprocal obligations of help, defence, and redress of injuries; the right of bestowing names upon its members; the right of adopting strangers into the gens; common religious rites; a common burial-place; and a council of the gens. Now, these traits may be regarded as specific clan or gentile characteristics only if no other social unit is ever associated with them, and if the clan or gens is always so associated. That such is not the case, is no longer a matter of dispute. Starting with Morgan's conception as representing an attitude still surviving and carried by him to its utmost logical conclusion, we may now proceed to analyze, at the hand of North American material, the different types of social units which occur in that area, as well as their functions, with a view of ascertaining somewhat fully the relation of structure and function in social organization. We shall start with the individual, then proceed from the individual family, the maternal and paternal family, to the clan, the gens, the phratry and dual division, the tribe and the confederacy.

The Individual. — It may seem paradoxical to speak of an individual as a social unit. When one considers, however, that an individual exercises functions in society, and that these functions are in part like the functions of a family, a clan, a tribe; and when one also remembers that the function is what constitutes the real content and bearing of a social unit, — he comes to realize that the individual, while on the one hand standing in contrast to the social unit of which he is a part, must, on the other hand, be classed as a social unit, an agency having certain functions in society, together with the family, the clan, the tribe.

A superficial view of Indian life, of "savage" life in general, is apt

to leave one with the impression that the individual as such, in a primitive community, is utterly bereft of all initiative, is bound hand and foot by custom, is a mere reflection of his social setting. While this is in part true, it is not the whole truth; and a more careful insight discloses a wide and important sphere of individual rights, activities, and initiative. The individual owns property, although the man's share may often be restricted to his clothing and weapons; the woman's, to the house-utensils, industrial appliances, but also to the house itself. In the Indians' view of property, however, the concept readily transgresses the bounds of material possessions. Free from the conceptual constraints which in modern times manifest themselves in copyright litigations, the Indian boldly passes from the material to the spiritual, and extends the concept of property to dances, songs, ritualistic details, myths, incantations, individual medicinal and supernatural powers. The ceremonial organizations of the Omaha or the Zuñi, or the Northwest coast tribes, furnish abundant examples of such spiritual property-rights. Among the Nootka, where the phenomenon of individual privilege flourishes undisturbed by the constraining frame of definite social groupings, we see perhaps the most extreme example of the wealth of individual prerogatives, together with the tendency to pass them on through inheritance; but, even outside of ceremonial complexes, such spiritual possessions as are acquired, for instance, through supernatural experiences with guardian-spirits, are strictly individual in character. The right of individual initiative was clearly recognized, and included activities of public concern, such as war and hunting. Even among such tribes as the Iroquois or the tribes of the Plains, where the business of war and that of hunting was highly socialized and associated with elaborate ceremonial, the right was not denied to the individual to start a war-party or to hunt on his own account. The specific rights of chiefs, on the other hand, it seems, were strictly limited throughout the North American area. The rights of initiative accorded the medicine-man were distinctly wider, especially where, as in the case of the Tlingit or Haida shaman, he appeared as an individual, unhampered by the rules and restraints of a religious or ceremonial brotherhood. Individual initiative in artistic activity and in invention in general has often been hinted at in recent discussion, but here our knowledge is too limited to warrant positive assertion.[1]

[1] The functions of the individual, the range of individual initiative in primitive society, have been little understood. We may therefore look forward with interest to the publication of W. D. Wallis's researches bearing on that problem.

THE INDIVIDUAL FAMILY. — Among tribes where the individual family exists side by side with kinship groups and their almost invariable concomitant, exogamy, the unity of the family is much impaired, and its importance subordinated. While it displays more solidarity in tribes of the family-village type, it is true, as a general proposition applicable to tribes of both types, that the individual family does not often appear as a specific social, ceremonial, economic, or political unit. Further data from the Nootka may to some extent impair the validity of this statement. In the field of ceremonial activity it may be noted that among the Iroquois, Delaware, Putelo, and other tribes, the individual family had a death-feast apart from the more imposing one associated with the clan. In one field of social activity, however, the individual family is pre-eminent; and that is education. This all-important process is, among Indians in general, vastly more constructive and less punitive than among their white brethren. The essentials of etiquette, of ceremonial behavior, of domestic activities, of industrial arts, of hunting and the use of weapons, are taught to the boy and the girl by their parents; in matters of folk-lore and tradition, parental authority is usually supplemented and transcended by that of the grandfather, grandmother, or of both. The matter of marriage is also largely attended to by the individual family, with emphasis on the female side; for, while the consent of the fathers is sought, the matrimonial candidates are selected and duly weighted by the mothers of the two families, and the wisdom of their choice is but seldom questioned. Lowie reports that among the Shoshone the individual family exercises juridical functions in the case of crimes, such as murder. This must be regarded as highly exceptional.

THE MATERNAL AND THE PATERNAL FAMILY. — A maternal family embraces all the male and female descendants of a woman, the descendants of her female descendants, and so on. The paternal family embraces all the male and female descendants of a man, the descendants of his male descendants, and so on. As will presently appear, however, the continuity of a family, in this wider sense, does not extend from generation to generation in perpetuity, as is the case with the gens and the clan, but is restricted to a limited number of generations, after which some of the offshoots of the family are no longer recognized as forming part of it. The maternal family has been carefully studied and described only among the Confederated Iroquois, where the functions of that social unit are numerous and its

bearings all-important, and where it is designated by a separate native term distinct from that used for the clan. There can be little doubt, however, that maternal and paternal families have played a rôle elsewhere among Indian tribes; and specific information on this point from field-workers is invited. A remark of Miss Fletcher's about the descent, among the Omaha, of certain ceremonial functions in groups of paternal blood-relations, suggests the presence of such a unit at least in that tribe. We may not, however, expect to find the maternal or paternal family as prominent in any other tribe in North America as it is among the Iroquois; for, were that so, the fact would certainly have been observed and recorded by this time. Among the Iroquois the maternal family exercised, in ancient times, ceremonial and religious functions which have since become obsolete. The main concern, however, of the maternal family, was the election and deposition of chiefs and ceremonial officials; and in this respect the maternal family still stands supreme wherever the social system of the Iroquois has been preserved. The relation of the maternal family to the clan constitutes a somewhat puzzling subject; and I may perhaps be permitted to cite, in this connection, a passage prepared for another essay which may not appear in print for some time.

"The clan and the maternal family, notwithstanding the existence of separate terms for the two kinds of social units, are constantly being confounded by even the most competent informants. Several reasons may be assigned for this fact. Notwithstanding their objective and functional differences, the clan and the family are clearly based on the same principle, — both social units comprise a group of people united by maternal descent. In the maternal family the relationship correlated with the descent is that of blood, and its degree is definitely known for all individuals of the family. In the clan the degree of relationship between clan-mates cannot be defined [except in so far as the clan embraces blood-relatives], but the sense of such relationship is ever there, and, as in the family, it is associated with the maternal line. Speaking analytically, the clan is nothing but an overgrown family, embracing individuals of indefinite relationship. In recent times many clans have become depleted in number, owing to migration or other causes. Thus it happens, in individual instances, that a clan coincides with a maternal family, in which case the two units can no longer be distinguished. The election of chiefs and ceremonial officials, moreover, while intimately associated with the clan, is the particular function of a maternal family within the clan, thus constituting another bond between the two social bodies.

"There can be no doubt, however, that the clan and the maternal family are really distinct. It has been shown that the chieftainships regularly descend in maternal families; but outside of these families there are, individual instances excepted, other families, other lines of descent, in the clans to which the chieftainships belong. If the chief's family becomes extinct, or has no males available for chieftainship, the title may be transferred, temporarily or permanently, to another family of the same clan, or even to some family of another clan. . . . The mechanism by which a family is perpetuated from generation to generation differs radically from that operating in the clan. The family has no outward symbol of its unity, and its continuance is due to the memory of the concrete relationships involved. The clan, on the other hand, owing mainly to the presence of a clan name, is handed down from mother to children automatically, so to say, and the clan name suffices to keep all its members identified from generation to generation. As a corollary of this difference appear the fluctuating character of the family and the permanence of the clan. Whereas the clan sustains no loss of members except through actual depletion or some artificial process, such as adoption of its members by another clan, the family of individuals where relationship is definitely known always carries a fringe of individuals who are known to be related to the family by blood, but the precise degree of whose relationship to the family has been forgotten. And beyond these there are still other individuals who, in an objective test, would prove to be related to the family by blood, but the fact of whose relationship itself is no longer recognized. Thus the family constantly tends to break up, some lines of descent multiplying, others becoming extinct, and so on." [1]

The confusion between a maternal family and a clan is of old standing. Morgan, who must have known the maternal family of the Iroquois better than any other writer, living or dead, nevertheless makes the statement that "a knowledge of the relationship to each other of the members of the same gens [clan] is never lost." [2] This proposition applies to a maternal family, but not to a clan. It is much to be desired that our information on the social systems of the

[1] This passage is quoted by permission of the Geological Survey, Ottawa, Canada, from a summary report for 1913–14, on field-work conducted by the author among the Canadian Iroquois.

[2] "Houses and House-Life of the American Aborigines" (Contributions to North American Ethnology, vol. iv, p. 33, note).

Indians of North America should be amplified with this special point in view.

The Clan and the Gens. — Clans and gentes, in the North American area, are associated with many diverse functions. Among the Iroquois the clan-mates held their land in common, and had clan burial-grounds. Among the tribes of the Northwest coast, clans owned sections on the coast, as well as strips of land along the course of creeks, for their fishing; and entire valleys for their hunting. Conditions among the Zuñi were not dissimilar to these; but we do not find clan or gentile ownership of land among the Winnebago, or the Omaha, or the Crow. Among the Iroquois and Omaha, the clan or gens has distinct social and political functions in connection with chieftainships, clan or gentile councils, etc. The political functions of clans on the Northwest coast are not negligible, but here they are overshadowed by similar functions of the household and town. On the other hand, the clan among the Iroquois is distinctly not a ceremonial unit; whereas among the Tlingit or Haida, or Tsimshian, or Kwakiutl, or Omaha and the group of tribes similarly organized, or the Zuñi, the clans or gentes carry multitudinous ceremonial functions, are associated with songs, dances, masks, myths, medicinal powers, medicine-bundles, and what not. On the other hand, among the Delaware and other Algonquian tribes, the Crow and the Hidatsa, the clans are, as among the Iroquois, non-ceremonial units. Clan or gentile sets of individual names are a very common feature indeed. It is spread all over the Northwest coast; we find it among the Omaha and related tribes; among the Winnebago, the Iroquois, and in the Southwest and Southeast; although the distribution of the feature in the two last-named areas is not sufficiently ascertained. The precise nature, however, of the relation between the individual name, its content, and the clan or gens, varies greatly in the different tribes. Among the Tlingit, for instance, the majority of the names are animal, but they do not refer to the clan crest; among the Haida the names have fallen prey to the influence of the potlatch complex, and one finds the majority of them reflecting ideas suggested by the potlatch. The Omaha individual names in part refer to the gentile totem, in part they are of an indeterminate character, standing in no relation whatsoever to the totemic ideas of the group. Among the Wyandot, according to data as yet unpublished, the majority of the names stand in direct relation to the clan totem; while among the Confederated Iroquois the names have a clearly defined type, but in no

way reflect the identity of the clan to which they belong; so that the clan sets are kept apart merely by the knowledge, on the part of the particular clansmen, that "such and such names were used in our clan before, and therefore we shall use them, while such and such other names were and are being used in another clan, and therefore we may not use them."

In exogamy, at first sight, one seems to find a trait invariably associated with clans or gentes in North America; but here, again, closer inspection discloses at least two ways in which clans or gentes are associated with exogamy. Among the Crow, Fox, and many tribes in the Southwest and Southeast, the clans as such are the carriers of exogamous functions, are exogamous units; such is also the case among the Iroquois, but here we have evidence to the effect that the phratry was anciently the exogamous unit. At that time, then, the exogamy of the clans was a derivative feature.[1] In the same sense the clans of the Tlingit and Haida, the Winnebago, and the so-called "sub-gentes" of the Omaha, are derivatively exogamous. The situation among the Omaha is not clear, but it seems that the social condition found among them by the ethnologist was one of transition from gentile exogamy to exogamy of the sub-gens. The more intimate psychic correlate of exogamy cannot, at this late time, be readily ascertained; but in a general way the statement seems justified that the strong emotional backing of exogamy, which constitutes it a religious imperative, is not characteristic of North America, a milder emotional reaction in the form of social opprobrium or ridicule taking its place.

Before leaving this analysis of the clan and gens, I want to note another feature relating to the kinship group as a part of the tribe. A survey of American data (as of analogous data in other areas) reveals the fact that, in point of number of clans, clan-systems represent two types, which may be designated as systems with a limited and those with an unlimited number of clans. Of the first type, the Iroquois, the Omaha, Winnebago, Crow, are representative. Among the Iroquois, the Mohawk and Oneida have only three clans each; the Seneca have eight; the Cayuga, ten; and the Onondaga, fourteen.

[1] Compare my discussion of exogamy in the Journal of American Folk-Lore, vol. xxiii (1910), pp. 231–251; R. H. Lowie's "A New Conception of Totemism" (American Anthropologist, 1911, pp. 193–198); my "Totemism and Exogamy defined: a Rejoinder" (*ibid.*, pp. 589–592); and Lowie's "Social Organization" (The American Journal of Sociology, 1914, pp. 68–97).

This does not include some obviously recent formations. The number of clans common to the last three tribes is eight, and that may be regarded as the probable number of clans before the separation of the tribes. The Omaha have ten clans, evenly divided between the two phratries. The Winnebago have twelve, — four in one, eight in the other phratry; the number of individuals in each phratry, however, being about equal. The Crow have thirteen, grouped in five phratries of two clans each, and one of three clans. In all these tribes the number of clans is small; and the number of individuals in each clan, large, being counted by the hundreds. Among the Tlingit or Haida, on the other hand, we find some fifty odd clans; the number among the Kwakiutl is still larger; the Hopi and Zuñi of the Southwest, the Creek and Natchez of the Southeast, also have numerous clans. In these instances the number of individuals in a clan must be small, — as a rule, considerably under one hundred. The clans and gentes, then, in the two types of tribes, are very different units numerically; and their relations to the tribe, and to other clans within the tribe, must be different. It would be strange indeed if such objective contrasts were not to have any psychic correlates. From the genetic point of view, moreover, — that is, in the problem of clan origin, — the above contrast would not seem to be without significance. Nothing more definite can be said on the question at this stage, the great need being further knowledge.

The Phratry and the Dual Division. — The phratries or dual divisions of the Iroquois appear on all ceremonial occasions. At the great yearly festivals, such as the Green-Corn or Mid-Winter, at the ceremonial meetings of the medicine societies or religious societies, the two sides are always represented; and in the Long House they are spacially separated, the speakers of each side addressing the other in the course of the ceremonial. Among the Tlingit, also, the phratries or dual divisions are ceremonial units, and the great potlatches, for instance, are always given by one phratry to the other. Similarly among the Winnebago, the phratries or dual divisions appear as ceremonial units in the war-bundle feasts; and throughout those of the Plains tribes who have the camp circle and perform the Sun Dance, the phratries or dual divisions appear as ceremonial units. Among the Iroquois the phratries also exercise political functions, one phratry having, for instance, the *veto* right over the choice of the other in the election of chiefs. In no other tribe in North America, so far as known, did phratries exercise political functions like those

of the Iroquois. The separation of phratries at games, feasts, contests, on the other hand, is a rather common feature, shared by the Iroquois, Tlingit, Omaha, and Yuchi; among the last named, however, the dual divisions are not phratries, for they are not subdivided into clans, but appear quite independent of the clan units intersecting the latter. Among the Tlingit and the Iroquois the phratries exercise reciprocal functions in burial and minor services. Phratries that are not dual divisions, such as occur among the Crow or in the Southwest, do not seem to have any particular functions, except an occasional tendency towards exogamy in the Southwest. Dual divisions, on the other hand, are commonly exogamous. Those of the Iroquois must, on good evidence, be regarded as having been exogamous in the past. Exogamy is the rule with the dual divisions of the Tlingit, Haida, and Winnebago, and in the past probably of the Omaha and related tribes; but the dual divisions of the Yuchi, which are not phratries, do not practise exogamy, nor is exogamy associated with the phratries or dual divisions of the Hidatsa. Finally, the point made in connection with the clan holds equally for the phratry: an Iroquois phratry with its four odd clans, or an Omaha one with its five, cannot be conceived as strictly comparable to a Tlingit phratry subdivided into some twenty-five clans; or to a Crow phratry, which is nothing but a loose association of clans, without, it would seem, much functional significance.

The Tribe and the Confederacy. — The functions of a tribe in North America are not sufficiently known. Especially are we in doubt as to its political status, and a discussion of that subject may perhaps be deferred. Without doubt, however, the tribe appears as a religious and ceremonial unit on such occasions as the Sun Dance of the Plains, or the Midewiwin of the Winnebago and related tribes, or the Busk of the Creek, or the great yearly festivals of the Iroquois at the time when the tribes still preserved their geographical independence, or even at the present time on those reserves where the assimilation of the separate tribes, leading to the loss of tribal solidarity, has not proceeded very far.

Still less definite information is obtainable on the Confederacies, such as the seven council-fires of the Dakota, or the Powhatan Confederacy. The confederacy, on the other hand, known as the "League of the Iroquois," has been carefully studied and described. It appears as a strongly knit political body, which functions as a unit in the relations, both in war and in peace, of the Iroquois with other tribes.

It also appears as a ceremonial body on such occasions as the investiture of a chief. Its social significance was great, for from it emanated the authority vested in the fifty chiefs or lords of the League.

The Local Group. — The significance of territorial units in primitive life has certainly been underestimated. We read a good deal about the life of the family and the clan, and the blood-bond that constitutes the real foundation of primitive society. Relatively little, on the other hand, is heard about the bearing and functions of the local group; and the common inference is that its importance is negligible. Much credit is due to Dr. John R. Swanton for his attempts to stir up interest in the study of the local basis of Indian life.

Even a superficial survey discloses the fact that in tribes of the family-village type the local group shares with the family, itself a unit with marked local associations, the social, political, and ceremonial functions occurring in that area; but its significance is by no means restricted to tribes of that type. Among the Iroquois and Omaha, Winnebago, Haida and Tlingit,—tribes dominated by complex and functionally all-important clan or gentile systems, — the local group remains a prominent factor in the life of the people. Among the Iroquois it never lost its significance as an economic unit, — a body for mutual assistance, in the work of the fields, in building houses, in the innumerable odds and ends of the various households. On the Northwest coast the solidarity of the local group is great, in their winter villages, as well as in their temporary habitations on the coast or in the valleys, or along the course of rivers, for summer fishing or for hunting of sea-mammals. Among the Western Plains tribes, the local groups on which the camp circle is based are scarcely less important than in the family-village area; and the more intense sense of kinship between the members of the group, based on the presence in it of many blood-relatives, only serves to increase its solidarity. If we look a little further back, the local group appears as a unit of even greater significance, for converging evidence from many parts of the North American area points to territorial unity as the basis for future clan and gentile systems. The mythology of the Iroquois, including the Deganawída epic, abounds in references to villages and village chiefs; no mention being made, except in the Deganawída epic, of clans or lords. With all the discounting due to such evidence as a source for historic reconstruction, the impression is irresistible that the local units were, if not the only, yet the all-important units in ancient Iroquois society of pre-League days. The strong local

associations of clans with villages and long-houses also point in that direction; although we should hesitate to assert, in the absence of sufficient evidence, that the Iroquois clans have developed out of local groups. That the camp circle, wherever it occurs, goes back to a ceremonial association of locally disparate groups, there can be little doubt; and the identification of such camp-circle divisions with gentes, in tribes of the Omaha type, speaks strongly for the double origin of the Omaha gentes from local groups with ceremonial functions. The local associations of the Tlingit and Haida clans, of local name, are most pronounced. Not only do their clan myths point to definite localities as the homes of clans, — the presence of shell-heaps corroborating mythological evidence, — but among the Tlingit, for instance, the vast majority of the clans are really local units present in only one locality. In the Southwest the situation is not clear: but here, also, recent observations supported by traditional accounts point to the local group as the ancient social unit and the precursor of the clan. Evidence bearing on the significance of territorial cohabitation in clan origins is furnished by the Kwakiutl, many Siouan and Algonquian tribes, and by the Iroquois, where new clans are known to have originated through migrations of offshoots of overpopulous clans, or through the fusion of depleted clans or sections of clans inhabiting the same locality. If we add to this the theoretical grounds referred to before [1] and discussed elsewhere,[2] for regarding the territorial unit as the most primitive form of social grouping, it is hardly too much to say that we must see in the local group by far the most ancient, most universal, and on the whole a most important, unit in primitive society.

Social Units defined. — A comparative glance at the social units discussed above, as related to their functions, reveals a constant overlapping of functions. The individual, it is true, stands out with sufficient clearness, the plausibility of which fact requires no comment. The tribe and the confederacy also stand in a class by themselves, for both of these groupings appear as units in intertribal dealings, — a trait which sharply differentiates them from intra-tribal social divisions. It must be noted, though, that ceremonial functions may become associated with all the social units here passed in review, beginning with the individual, and ending with the confederacy.

[1] See p. 357.

[2] Compare my "Origin of Totemism" (American Anthropologist, N. S., vol. xiv, 1912, p. 605); and "Clan Origins among the Iroquois" (*Ibid.*, 1915, abstract of a lecture delivered on Oct. 26, 1914, before the Ethnological Society of New York).

It is in the case of social units in the narrower sense, however, of subdivisions within the tribe, that the overlapping of functions becomes most conspicuous. As such may be classed the dual division and phratry, the clan and the gens, the maternal and paternal family, and, with certain reservations, the individual family and the local group. With reference to these units, it will be observed that in different tribes or culture areas, units classed as identical terminologically, display partly or wholly different functions; and that, on the other hand, social, political, and ceremonial functions may become associated with each and all of these units. But a social unit is what it does. The function is the real test of the content and bearing of a social unit. Hence social units designated by the same term, but having different functions, are really distinct; while social units distinguished terminologically, but with the same functions, are similar or identical. The only scientifically satisfactory way of defining social units would be to define them on the basis of their functions. This, however, cannot be done; for, as shown above, while some functions prefer certain social units, almost any of a set of important functions may become associated with almost any social unit. The impossibility of defining social units by their functions becomes even more apparent when one considers that ceremonial, religious, political, or social functions are shared by social units of the type here discussed with social aggregates of an entirely different character; such as the religious societies of the Southwest or Northwest, the military or age societies of the Plains, the medicine societies of the Iroquois. The subject has another aspect, however, which seems to resolve an apparently hopeless situation. Whereas the bond between the members of a society consists solely in their common functions, some of the social units analyzed in these pages are such also on account of their social composition. A group based on relationship, and one based on local cohabitation, may be designated as natural groups. If the concept of relationship be extended from a group of blood-relatives to a group tied in part only by the bond of blood, but displaying solidarity through assumed, fictitious kinship; and if to this be added another natural group, that constituted by a married couple with their immediate ancestors and progeny, — we obtain the fundamental units in our series: the individual family, the maternal and paternal family, the clan and the gens. The phratry and dual division may, with some reservations, also be included in the series, in so far as the phratry is a subdivided clan or gens, or an asso-

ciation of clans or gentes, and in so far as the dual division is the same. If such is the case, the terms used for these social units should not be discarded. We may not define them by their functions, for reasons stated before; but we must give them definitions wide enough to include many specific varieties, yet narrow enough to convey an appreciable meaning. Keeping this in mind, the following definitions may be suggested, which, moreover, agree fairly well with widely accepted usage:—

A *band* is a local group without very clearly defined functions.

A *sept* is a local group which is a subdivision of a larger local group, or a local subdivision of a social unit, in the restricted sense.

A *village* is a local group of fairly definite internal organization and external functions.

A *family* or *individual family* requires no further definition.

A *maternal family* is constituted by a woman, all her female and male descendants, the descendants of her female descendants, and so on. A maternal family, however, never extends, in its entirety, beyond five or at most six generations. A *paternal family* is constituted by a man, all his male and female descendants, the descendants of his male descendants, and so on. The remark made about the maternal family applies here also.

A *clan* is a subdivision of a tribe constituted by a group of actual and assumed kindred, which has a name and is hereditary in the maternal line. A *gens* is the same, except that it is hereditary in the paternal line.

A *phratry* is a social subdivision of a tribe which is itself subdivided. It may be hereditary in the maternal or the paternal line.

A *dual division* or *moiety* requires no further definition.

To supplement these terms, descriptive terms will have to be used as occasion requires, for difficulties will arise with this as with any other set of definitions. If this is done, there will be more definiteness and less confusion in our discussions of social organization, and a dim hope may then arise of an ultimate international agreement on the subject.

VI. SOCIAL ORGANIZATION IN ITS RELATIONS TO THE OTHER ASPECTS OF CULTURE

Space does not permit us to disentangle with adequate care the multifarious threads — some gross and obvious, others elusive and delicate — which bind the social system of a group to the other aspects of its culture. A few remarks, however, will be in place. The

relations of social organization to the rest of culture are either general or specific. Under general relations would be included such facts as the reflection of the dual organization of the Iroquois or Omaha in their mythologies; or the patterning of the animal Olympus of the Haida or Tsimshian after the principles of their social systems; or the inheritance of certain ceremonial offices in a clan or gens or maternal family; or the reflection of the family or clan basis of organization in the form and size of houses; or the effect of communal work, following the lines of social units, on economic and industrial activities. The specific relations consist in that aspect of social units which constitutes them the carriers of features belonging to other aspects of culture; for the functions of the social units discussed in the preceding section are but so many bonds between social organization and art, and mythology, and ceremonialism, and politics, and between each one of these and the others. The intimacy of these bonds is not easily realized by representatives of a foreign culture. The association of natural groups, based on local cohabitation or blood-ties, with multifarious functions involving many important aspects of the material and spiritual possessions of the group, are, on the whole, foreign to our culture; and the social units which exercise various functions — such as political parties, local churches, clubs, colleges, social classes, or industrial groups — either embrace so many individuals each, or are themselves so numerous, as to impair the stability and intensity of the associations formed during the exercise of their functions. The individuals, moreover, who constitute the psychic factors of these associations and the actual carriers of their functions, participate simultaneously in so many diverse cycles of associations, that but few permanent psychic connections can emerge from the maze of conflicting ideas, motives, interests, and emotional values. The situation is radically different in an Indian, in a primitive community. The clan or gens which is the carrier of functions consists at most of a few hundred individuals, usually much less than that; the exercise of these functions is never totally interrupted; and at frequent intervals, at feasts, ceremonies, on political and social occasions, opportunity is given for the recharging of emotional values, and through them of conceptual associations. The associations thus formed and refreshed, in an atmosphere of high psychic incandescence, attain an intensity and stability quite foreign to such associations in our own culture.

From these considerations two general conclusions force themselves

upon the mind. Social units, in primitive society, become, through their functions, the carriers of the cultural values of the group; and to the extent to which that is true, the culture of the group cannot be properly understood without a thorough grasp of the principles underlying the social system, nor can the social units be seen in proper perspective without an intimate knowledge of the culture of the group. Again, it is widely recognized that one of the fundamental contrasts between modern and primitive society consists in the fact that conceptual and emotional associations abound in the latter which in kind and intensity are, on the whole, foreign to the former. Now, we have seen how the exercise by social units, of functions replete with cultural values, favors the formation of such associations; we have also seen how the frequently-recurring dynamic situations heighten the intensity and insure the permanence of such associations. May we not suggest, then, that part, at least, of the secret of that fundamental contrast between modern and primitive society, lies in the fact that in primitive society, social units assume functions which bring them into intimate contact with other aspects of the culture of the group, and which bring the latter into intimate contact with one another?

VII. SUMMARY

The salient points of the preceding analysis may be summarized in the following propositions: —

1. In addition to a clan and a gentile area, there is in North America a vast area of the family-village type;

2. The tribes of Indians organized on the clan and gentile basis are, on the whole, associated with higher cultures than those organized on the family-village basis;

3. No proof is forthcoming of a pre-existing maternal kinship system in tribes having a paternal kinship system;

4. The local group, while pre-eminent in the family-village system, is by no means negligible when associated with a clan or gentile system; and, in a wider sense,

5. The local group must be regarded as the most ancient and fundamental basis of social organization;

6. Evidence abounds of the diffusion, in whole or in part, of social systems from tribe to tribe or from culture area to culture area;

7. There is also evidence of the reproduction of definite social pattern, within the bounds of a single culture area or individual tribe;

8. Questions of diffusion and pattern constitute two aspects of one socio-psychological problem;

9. Some functions tend to appear in association with certain particular social units, but a number of functions may become associated with any of a set of social units: hence,

10. Social units may not be defined in accordance with their functions; but

11. Certain social units are natural territorial or kinship groups, and as such they preserve their individuality whatever their functions, and may be defined (see p. 375);

12. Through the functional association of social units with other aspects of culture, the social system and the rest of the culture of a group are constituted an organic whole, and neither can be understood in dissociation from the other; on the other hand,

13. The specific socialization of cultural values in social units conditions and furthers the formation of conceptual and emotional associations between the different aspects of the culture of a group;

14. The intensity and stability of such associations constitutes a striking contrast between modern society and primitive society, hence the above considerations suggest at least a partial interpretation of that contrast.

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